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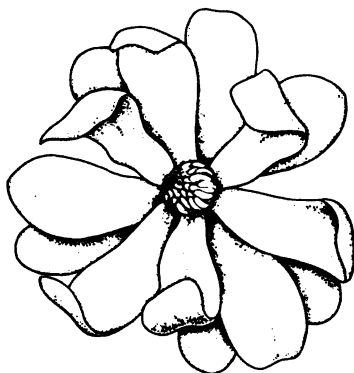
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THE
FAIRYLAND
OF
FLOWERS.

—
A POPULAR ILLUSTRATED BOTANY

Third Edition. Revised and Enlarged.

—
BY MARA L. PRATT.

—
BOSTON.—CHICAGO.
EDUCATIONAL PUBLISHING COMPANY.

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INTRODUCTION.

Botanists tell us always that the way to study flowers is to take the Flora and go out into the fields. Then educators tell us that the time to study Botany is in childhood; that flowers are the natural play-fellows of the children.

Both these statements seem plausible and just. Intelligent teachers everywhere will admit that both are ideal and true, But can it be done? "Ay, there's the rub!" The fields are there, the children are willing to be taught, the teacher is glad to teach — but the Flora! Children cannot follow the Flora. The hard words are so numerous! The headings with their sub-headings, and their sub-sub-headings, their references with their sub-references and their sub-sub-references, are so perplexing, puzzling, confusing!

And so, year after year the teacher reluctantly lays aside this beautiful study, or teaches it only very superficially and unsatisfactorily, and the pupil waits until he reaches the High School when he can understand the "Flora."

In the FAIRYLAND OF FLOWERS we have tried to make a plan of the Flora so simple and untechnical, that, with a little guidance from the teacher, the child *can* trace a flower from its great "class" down to the particular number of the particular family to which it belongs. How children enjoy studying out new things! travelling along new paths! untangling strange snarls! working out new puzzles! It is the natural bent of the child-mind. Then why not present to him this never-ending, ever-varying puzzle of the Flora. Is it not as interesting as "sliced animals," as instructive as "dissected maps," and a thousand times as ennobling as "gem puzzles?"

With a blank-book, in which the child shall write out his description of the plant and mount his specimen, much can be done in the long spring Friday afternoons to arouse in the children a love for nature, and a real tenderness for the beautiful flowers in the woods about us.

Nothing fixes a lesson in a child's mind like "writing it out." On another page we submit, as an example, a brief analysis of the *Cornel*. Let each pressed specimen be fastened into the child's book, — little strips of court plaster will be found excellent for holding the flowers in place. Then, step by step, trace the flower along from the great division, the teacher writing the description on the board as each step in the analysis is studied out.

Teach your boys, also, the little legends and the poetry of the flowers — make the flowers real, living things to them — teach them that the grandest men, many of the most noted writers have always loved the flowers, and have thought it worth while to be very tender in their dealings with them. Break up in your boys any existing notion that flowers are "good enough for girls;" or that it is manly to trample down the little purple violets, or to snap off the heads of the bright-faced daisies.

The average, healthy, wide-awake boy may rebel at "set" moralizing; but he is not insensible to the beauty and grandeur of nature, if only we are wise enough to present it to him in a way that he can accept and understand.



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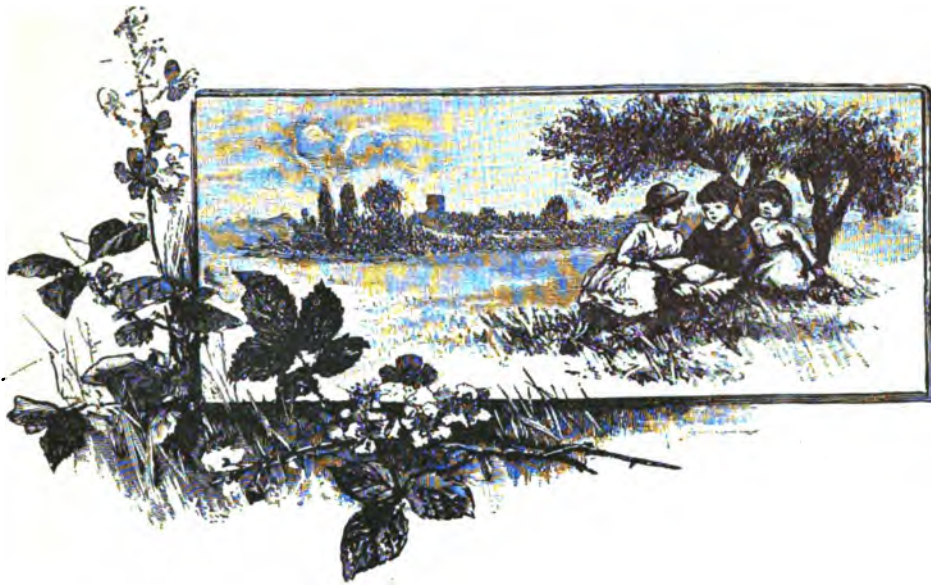
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"WHICH IS BEST?"



Fairyland of Flowers.

A PLANT is made up of three parts: (a.) ROOT, (b.) STEM, (c.) LEAVES.

These are all a plant needs to make it grow even to the size of a tree; and if growing were all a plant had to do, I presume a root, a stem, and the leaves would be all we should ever see in any plant.

But plants do have something else to do; and no one can be more glad of this than you little folks, when you are out in the fields gathering the beautiful wild flowers.

Suppose a plant did have nothing to do but to grow! Let us see what would happen and how our gardens and fields and forests would look.

If the tree-plant only grew and grew and made itself beautiful and tall and strong, by and by, when it had come to be very old, and the trunk had decayed and the branches had one by one died and fallen off—then there would be no tree in that place ever again.

If the beautiful green grass which came up so fresh and sweet this spring, did

nothing but grow and grow, then when the cold winter came with its frosts and snow and its frozen icy ground, the grass would be killed; and when the next spring came, instead of the sweet fresh velvet carpet, we should see only the dead yellow grass of the year before.

If the dear little violets and anemones, the star flowers and the buttercup should do nothing but grow, then when you had picked all you could find in the field or on the hillside, or the hot sun had wilted them, or the cold storms had beaten them down, there could never be any more violets or anemones in that field or on that hill-side—and it would not be many years, I think, before there would be no flowers anywhere in the whole world.

Are you not glad then that the trees and the grass and the flowering plants do do something more than just grow big and tall; for if next spring we should find that the grass had forgotten to come up again and the flowers had also forgotten to come, we should find it a dreary-looking world, indeed.

But by this time I'm sure you are anxious to know, what it is that the plants do besides growing, and how it is that the flowers come year after year, never forgetting us a single spring.

You have all watched your house-plants sending out the little buds, and you always know that soon there will be blossoms—beautiful velvety flowers of all colors. But did you notice that when the flowers had gone—faded and died—that there were little seeds left on the plant? While you were loving the beau-

tiful little blossom, were watching it so tenderly, and were telling it how beautiful it was, it was doing something for you in return for your kindness to it. It was forming these little, little seeds, putting them snugly away in a little vessel by themselves, and telling them to keep warm and dry until they were ready to open and send out other little plantlets like the one on which they were growing; and then to grow up strong and thrifty and bear more beautiful flowers like the one you had been watching all these days.

By and by—if it is a garden plant or a field plant—a frolicsome wind will come and blow these little seeds all about, till at last, tired out with their play with the wind, perhaps they cuddle themselves down on the soft earth and go to sleep. Sometimes they sleep only a little while—only a few days. Then you say, "Why, see all these little plants growing up in my garden! Where did they come from! I planted only one!" If the little plants could speak, I think they would say, "We are the children of this big plant beside us. When you were taking such good care of our mother, when you loved her so much and were so kind to her, she rolled us—the little seeds—up warm and dry, and whispered to us, that we too must grow into fine tall plants and bear some flowers for you."

Sometimes the seeds sleep a long, long time—all winter, in fact—and when at last they too wake up, you say, "See, the spring flowers are come again!" Not come again, exactly; but they have sent their children this time to make you glad.

II.—THE FLOWER.

THERE are many parts to a flower. Many of you have, no doubt, pulled flowers to pieces without really noticing how much there is to them.

There is one flower, though, the one you call the heart-flower, or the bleeding-heart, that is so very oddly built, that even the least observing child remembers it, I am sure.

It is the funny heart-shaped flower that people grow in their gardens. Don't you remember the pink coverings that look so much like rabbits, ears and all—and the white part inside that looks like a man in his shirt-sleeves, and another part that looks like a pair of tongs?

Well, all flowers have just as many parts to them, only they are not quite so oddly shaped, and so we do not notice them so quickly.

These parts of flowers have names which we must learn first of all. Let us take a flower to learn them from.

CALYX.—This is a Latin name, and means a flower-cup. And you will see it is quite like a cup into which the colored part of the flower sets. (Fig. 1.)



FIG. 1.

COROLLA.—The colored part of the flower. This word means crown—and indeed it is the crowning beauty of the flower, is it not? (Fig. 2 and 3.)



COROLLA OF TOBACCO PLANT.

FIGS. 2.



TUBULAR COROLLA.

FIG. 3.
COROLLA OF BINDWEED.

STAMENS.—In many flowers, the stamens grow fast upon the lowest part of the corolla.

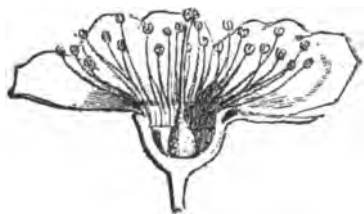


FIG. 4.

The tall, long part of the stamen is called the *filament*. The little body at the tip is called the *anther*. The powdery stuff that you so often get on your nose when you have been smelling too closely of a flower is on these anthers. It is called the *pollen*. (Fig. 4 and 5.)

DIFFERENT FORMS OF STAMENS (MAGNIFIED.)

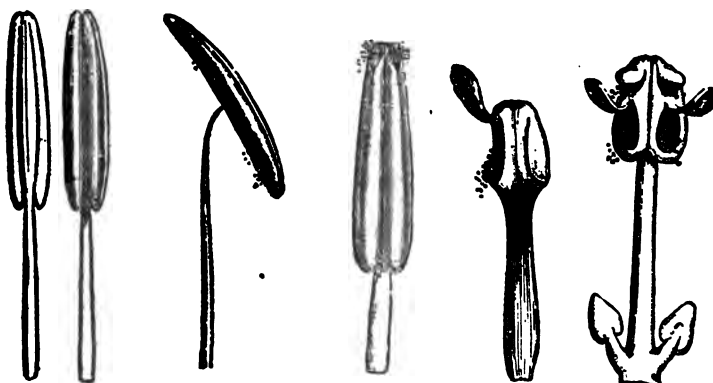


FIG. 5.

PISTILS.—These are the bodies in which the seeds are formed. A pistil has three parts. The rounded part at the bot-

tom is called the ovary (o). It is in there that the seeds are kept. The long, tall part which looks like the filament of the stamen, is, in the pistil called the style (*sty*). Then the larger part at the very end, looking a little like the anther, is the stigma. (*Stig.*) On this stigma you will usually find some of the pollen; but remember it did not grow there; it has blown over upon it from the anthers. (Fig. 6.)

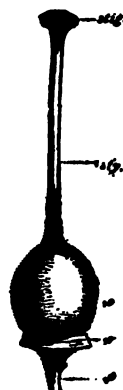


FIG. 6.

Here is a picture showing you how the ovary of a flower would look if you were to cut it open very carefully, just through the middle. Do you see the rows of little seeds inside? (Fig. 7.)

These are all the parts a flower ever has. There are never any more, and by and by you will very likely come across flowers which do not have all these. I have in mind now a flower that has no corolla even—and yet it is a flower. Some flowers have no calyx. Some stamens have no filaments; and

some pistils have no styles.

Now let us learn these new words, so that when you look at the flowers in your

gardens you will be able to find these different parts for yourself.

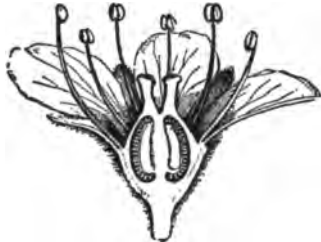


FIG. 7.

CALYX. — sepals.

COROLLA. — petals.

STAMENS. { pollen
 anthers
 filaments

PISTIL. { style.
 stigma.
 ovary

Each separate part of the corolla is called a *petal*. Each separate part of the calyx is called a *sepal*.

Can you fill in these blanks with the new words you have learned?

THE TIGER LILY.

Here is a Tiger Lily. See how the — of the — curl under, and how spotted they are. Keep your nose out of it, Alice, or you'll get it all covered with —. Just see how thick it is upon the —. There is some of this dust on the — of the — too; but it did not grow there. Our teacher told us to remember that the — grows on the —; and

gets to the — by being blown over to it.

There is one part wanting to this flower! I see! it is the —. Let us pull off the — of the — and see how the — will look standing up there all alone. Remember the — has three parts: the — which is the warm cradle for the baby seeds, the —, and the —.

ROSES OR RUE.

A maiden walked in the garden fair,
Where lovely flowers perfumed the air,
Where fountains plashed and the shadows sweet,
Played o'er the grasses around her feet;
Where toiling bees hummed their busy song,
And blithe birds caroled the whole day long!

No Rue that bloomed on the garden wall,
No fragrant Lily erect and tall,
No bright Carnation or Fuchsia bell,
No Wallflower, Orchid or Asphodel,
Could win the maiden's admiring glance;
She passed them all with a look askance.

The blushing Peach and the low-hung Pear,
The luscious Grapes in abundance there,
Enticed her not — Plum and Nectarine

Might tempt in vain with their velvet sheen,
For from garden so bright to view
She gathered only — a sprig of Rue.

In life's fair garden rare pleasures lie,
And will you pass them neglected by?
Gather no bloom from life's summer bowers,
To fill with fragrance the winter hours?
Pleasure or pain may be plucked by you;
Will you leave the Roses to cull the Rue?

Who passes the blossom of kindness by,
And leaves Love's Lillies to droop and die;
Who gives no heed to Affection's flowers,
Plucks no ripe fruit from life's well-hung bowers,
Of Trust or Sympathy, tried and true,
Has left life's Roses to cull its Rue.

III.—GOING TO SEED.

WE say when the flowers have faded and blown away, "This plant has gone to seed."

But what do we mean by that?

After the flower has stood nodding and smiling in the sunlight for a few days, it begins to fade and wither. Soon the corolla drops off, then the calyx and the stamens. By and by nothing is left to tell you where the flower once was except the ovary — the seed cradle. You thought the flower was nodding and smiling at you all those days when you were looking at her. And no doubt some of the time she was; for if flowers can speak to any body I am sure it would be to little boys and girls who are gentle with them; who step aside rather than crush even a common buttercup underfoot.

But some of those nods and smiles were for the little seed-children, I am sure; else how should they know that as soon as the flower has gone, they must begin to grow and grow until the ovary, their cradle, comes to be as big as a berry; or in some plants, it grows long like a pod; or in others it grows to be something very sweet and juicy, and O,

so nice to eat! Can you guess what it is? I am sure you know enough now about the seeds and the ovary or seed-vessel, that you will not be like a little boy I once knew who said: "Mamma, how do the seeds get inside the apple?"

"Perhaps they get in through the worm-holes," said his big brother, who liked nothing better than to bother little Clare.

The fruit of a plant, then, is the ovary grown large and ripe. All plants have a fruit; so you must no longer think that fruit is only something good to eat.

Those big, round berries left on the rose bush are the rose-bush fruit; those pretty little acorns on the oak tree are the oak-tree fruit; just as much as apples are apple-tree fruit, or pears are pear-tree fruit.

We now know the names of the different parts of a flower, and are able, I hope, to put the right names to the right parts. We know that a plant, after growing for a time, blossoms; we know that in the flower is the ovary or the fruit; that in this ovary or fruit is the seed; and that in the seed, small as it is, already there is a little plantlet which by and by shall take the place of the mother plant.



Here are some fruits of different plants. Can you tell what they all are?

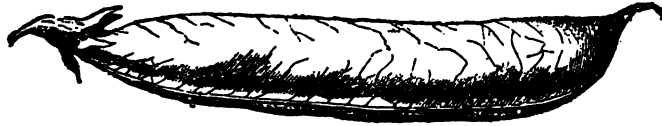


FIG. 8.



FIG. 9.



FIG. 10.



FIG. 11.



FIG. 12.



FIG. 13.

THE SEED AND THE PLANTLET.

INSIDE each seed, small as it almost fresh from the plant; still when may be, is a little plantlet already formed. In the Morning dead seeds. The little plantlet within Glory it is quite large—so never moves.

large that you can get it out from a fresh seed easily. There are not many seeds whose plantlets are large enough for you to see within, without a magnifying glass. This little wee plantlet inside the seed, has two little leaves growing upon a tiny stem. The leaves are called seed leaves or **COTYLEDONS**, and the stem is called a **RADICLE**.

Sometimes, in some plants, the seed drops at once to the ground, and begins very soon to grow; but most seeds do not grow at once. They usually cuddle down in the earth where they have fallen and sleep till spring; sometimes it sleeps on through another summer and does not wake until the next spring.

There is a great difference in seeds about waking up—as great difference as there is in children.

The seeds of the Red Maple fall from the tree in the Spring, and wake and begin to stretch themselves up into trees during the summer. The seeds of the Sugar Maple fall in the Autumn and do not wake until the next Spring.

Sometimes these seeds sleep so deeply that they forget to breathe. Then we say the seeds are dead. How long seeds will keep alive in their little shell no one can tell. Sometimes you send to a florist for seeds, and he will send them to you

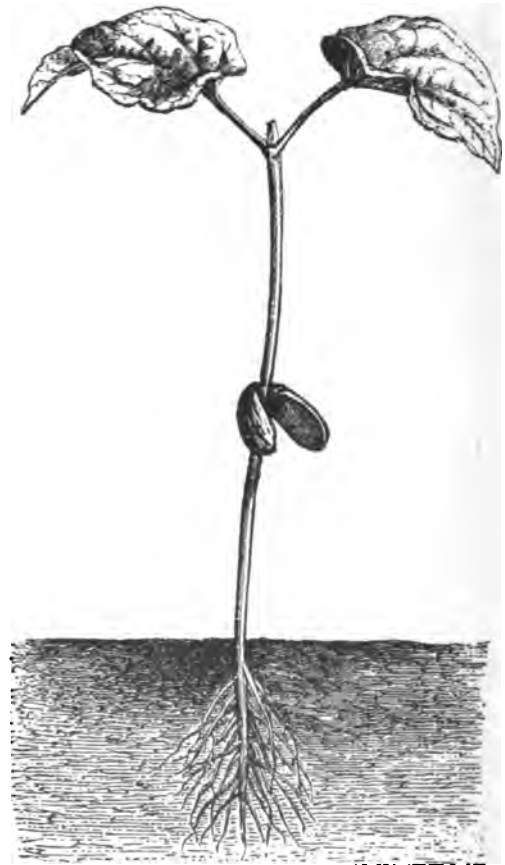


FIG. 14.

Then, too, another time the same kind of seeds will very likely grow up strong and straight after they have lain away in your closet perhaps for two or three years. Seeds from the Sensitive plant

have been known to keep alive and grow up into plants when they were sixty years old.

It is said that travellers have found seeds over two thousand years old in the Egyptian tombs; and that they have carried them home, have planted them,

and have raised plants from them. This, however, is a pretty big story, I suspect. Like the wonderful stories of the sea serpent, it is well enough to hear, but it would be hardly wise to take it as

“Honest and true
Black and blue.”

GROW, AND KEEP ON GROWING.

The sun shone out on a clear March day,
And sent his beams, so cheery,
Straight from the heavens so far away
Through a snow-bank damp and dreary,
Down, down and down through the forest
mold,
Though the chill west winds were blowing,
And said to the small seeds hidden there,
“Grow, and keep on growing.”

The seeds sprang up at the earnest call,
And the white roots burrowed lowly
In the deep, damp soil, poor patient things,
But the plants crept upward slowly;
They timidly peeped above the ground,
And sighed, “It has just been snowing;
We’ll snuggle back,” but the sun sent word,
“Grow, and keep on growing.”

Then the tiny mouths of the slender roots
Drank of the moisture springing
Amid the moss — the earth’s sweet soil
The food for their fruitage bringing.
But creeping thus in the dark, they found

Boulders their path bestrewing;
“We’ll rest,” they said; but the sun said,
“No!
Grow, and keep on growing.”

Then upward shot a spire of leaves,
And there ’neath the sun unfolding,
A tiny Oak spread its branching boughs,
A sight well worth beholding.
Soon tow’ring high — a forest king —
It made a noble showing,
Through heeding this earnest message well,
“Grow, and keep on growing.”

If a weight of woe or the winds of care
Check the soul in its upward springing,
Send the roots of the heart to take stronger
hold,
A sweeter nutrition bringing,
Then fill the soul with all right desires,
Aspire — for there is no knowing
How high shall mount the soul that strives
To grow, and keeps on growing.

IV. — HOW PLANTS GROW.

TO understand better this growth of plants from seeds, soak a bean in warm water, and remove the shiny outside coat, or shell. The whole inside is the bean plantlet. Split the bean, and you will easily see that there are indeed two parts, shaped very like *cotyledons*. They are the cotyledons, really; and if you lay them out side by side, you will find also a little *radicle*, very short to be sure, and also a little *plumule* already started.



FIG. 15

We will plant some beans in a box, cover them over very lightly with the earth, water them and keep them moist and soft. Now what will happen? The hard shell of the seed lying there in the moist warmth, will begin to soften and grow large just as you have seen beans and peas do which your mother has set away in water before she cooks them.

The little plantlet sleeping so soundly in its seed-cradle feels the warmth and begins to wake up and stretch itself just as the baby does when it begins to wake.

Then, as there is very little room in this seed-cradle for the plantlet to stretch, it soon pushes through its covering with

its little radicle, and throws open the sides of the little shell with its cotyledons — just as baby pushes away its blankets with its arms — and steps out free, a real little plant.



FIG. 16.

Now it begins to grow. The radicle begins to burrow down into the warm earth to make a root of itself. The cotyledons push themselves up into the light and we say our seeds have "sprouted."

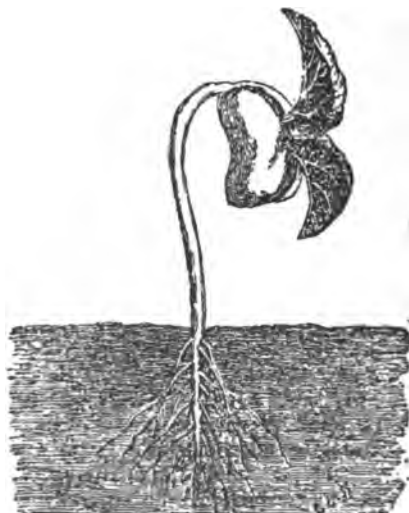


FIG. 17.

As the radicle grows down into the ground, it soon begins to send out little rootlets. (Figs. 15, 16, 17.)

At the same time, the cotyledons have spread themselves out in the sunlight until it is very plain that they are going to be little leaves.

But are there to be only two leaves to our plant? Look down between these two leaves—where they seem to join with the stem. If the leaves have reached their own natural growth, and you haven't been too impatient, I think you will find a tiny little something in there that looks like a bud.

This tiny something which looks like a bud is a *plumule*. It will stretch up and unfold itself soon, and you will have another leaf.

Then another plumule will appear, stretch itself up, unfold itself and form another leaf; then another, and another, until at last we shall have a beautiful long vine or branch.

In the cherry-stone, if we take off the

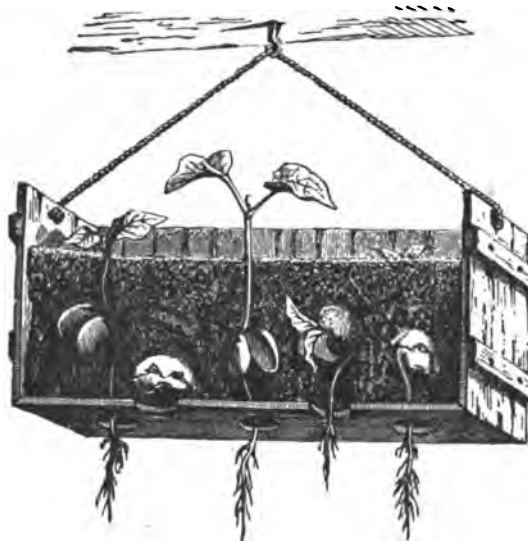
hard covering, we shall find in the "meat," as we call it, as in the bean, that we have again two cotyledons, and between these, folded in close, the radicle and the plumule.

And so we might go on studying the seed-vessels of all the plants we know. The only real difference we should find would be this; most of them would have *two cotyledons*, but now and then we should find some that have only *one cotyledon*.

This difference is a very important point to remember. When Botanists study the flowers and put them into their right classes and families, they would have little success did they forget this.

I. MONOCOTYLEDONS are those plants which have but *one cotyledon*.

II. DICOTYLEDONS are those plants which have *two cotyledons*.



THE LITTLE PINE-TREE.

(From the German.)

ONCE a little Pine-tree,
 In the forest ways,
 Sadly sighed and murmured,
 'Thro' the summer days.
 "I am clad in needles —
 Hateful things!" — he cried;
 "All the trees about me
 Laugh in scornful pride.
 Broad their leaves and fair to see;
 Worthless needles cover me.

"Ah, could I have chosen,
 Then, instead of these,
 Shining leaves should crown me,
 Shaming all the trees.
 Broad as theirs and brighter,
 Dazzling to behold;
 All of gleaming silver —
 Aye, of burnished gold.
 Then the rest would weep and sigh;
 None would be so fine as I."

Slept the little Pine-tree
 When the night came down,
 While the leaves he wished for
 Budded on his crown.
 All the forest wondered,
 At the dawn, to see
 What a golden fortune
 Decked this little tree.
 Then he sang and laughed aloud;
 Glad was he and very proud.

Foolish little Pine-tree!
 At the close of day,
 'Thro' the gloomy twilight,
 Came a thief that way.
 Soon the treasure vanished;
 Sighed the Pine, "Alas!
 Would that I had chosen
 Leaves of crystal glass."
 Long and bitterly he wept,
 But with night again he slept.

Gladly in the dawning
 Did he wake to find
 That the gentle fairies
 Had again been kind.
 How his blazing crystals
 Lit the morning air!
 Never had the forest
 Seen a sight so fair.
 Then a driving storm did pass;
 All his leaves were shattered glass.

Humbly said the Pine-tree,
 "I have learned 'tis best
 Not to wish for fortunes
 Fairer than the rest.
 Glad were I, and thankful,
 If I might be seen,
 Like the trees about me,
 Clad in tender green."
 Once again he slumbered, sad;
 Once again his wish he had.

Broad his leaves and fragrant,
 Rich were they and fine,
 Till a goat at noon-day
 Halted there to dine.
 Then her kids came skipping
 Round the fated tree;
 All his leaves could scarcely
 Make a meal for three.
 Every tender bud was nipt,
 Every branch and twig was stript.

Then the wretched Pine-tree
 Cried in deep despair,
 "Would I had my needles;
 They were green and fair.
 Never would I change them,"
 Sighed the little tree;
 "Just as nature gave them
 They were best for me."
 Then he slept, and waked, and found
 All his needles safe and sound!

—EUDORA S. BUMSTEAD.

V. HOW PLANTS GROW LARGE.

THE FLOWER'S SECRET.

O'er the western prairie,
In the fields of grain,
Through the northern forests,
And the southern plain,

Come the lovely flowers,
Ever sweet and bright,
Kindly sent to give us
Innocent delight.

Such a happy secret
Will its leaves unfold,
If you listen closely
When a flower you hold.
—FANNIE CHADWICK.

THE little sprout which peeps its little white head out of the soil at you has all it needs for its growth. It has now only to go on making more of what it already has—more roots below with which to draw food and drink from the moist earth, more leaves above to spread out in the air and sunlight.

All this nourishment taken by the root from the ground, and by the leaves from the air and sunlight is used up in increasing the size of the plant—that is, in making it grow, as we say.

Indeed don't you see that after all the little plants are very much like your own selves. The little baby must have its milk to make it grow, and by and by it must have its bread and meat, its fruit, its sunlight and good fresh air—all to help it grow big and strong. Did you ever happen to see a child whose mother was so foolishly careful of her house that she could not bear to let the sunlight in lest it should fade her carpets, and so foolishly careful of her child that she would not allow it out of doors lest it should take cold, or get freckled and tanned by the sunlight? There are a few such foolish mothers in the world, I am

afraid, and their children always remind me of those little pale, slender vines that one sees often growing in dark, damp places under the walls. These little vines do not live very long. They are very weak, tired little vines, because they do not have their proper food. They must have their food from the earth, and also their food from the sunlight and air.

So it is that if the plant has the right kind of food and enough of it, that it uses it up for its growth, and adds to its roots below, to its stem above, and unfolds a new pair of leaves at every joint in the stem. Each joint soon grows to its proper length, and each leaf grows to its proper size. Then they stop growing, and begin to act as sort of mother-leaves to the new little leaves that come. They now spread out their broad faces and drink in the air and sunlight, and pass this life-giving and strength-giving food to the new leaves. The new leaves in turn, take this food, unfold themselves and grow to *their* proper size. Then they too begin to help in the feeding of the next new leaves that come.

In this way, joint by joint, the stem grows longer and longer, and the leaves grow more and more in number.

When these stems grow straight up, each joint just above the one before it, we call it a *simple stem*. Lilies, sugar-canes, and corn-stalks grow in this manner. (Figs. 18 and 19.)



FIG. 18.—CORN.

But usually as a stem grows tall, it sends out *branches* or *side-shoots*. Roots, too, usually branch in all directions.

The branches from the stems are always regularly arranged. Each new branch starts out from the little hollow on the upper side of the leaf, just where it is joined to the upper stem.

Now what do you suppose a bud is? It is really a little branch at its very beginning. But as it peeped out and saw all the other branches, let us fancy

that perhaps it changed its mind about growing, and said to itself, "There are so many branches here already, I'm sure I can't be needed. Besides, I think a little bright color just here among these green leaves will add greatly to the beauty of this plant. I will stop reaching out, but will cuddle down here in this little hollow, and arrange myself anew, put on a gay-colored dress and surprise my brother and sister leaves by nodding a bright good-morning at them some fine day.

The plumule that we read about, recently, was a bud. But there is this peculiar thing about that bud,—it never blossoms. It has other work to do. It makes the main stem, and goes on day after day, month after month, year after year, as long as the plant lives. There is, too, such a bud at the end of every branch. It is called the end-bud, or as Botanists call it, the terminal-bud.

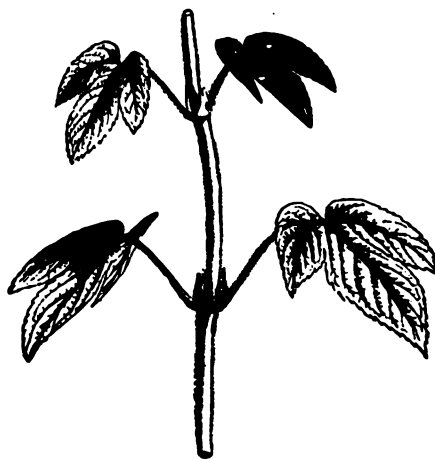


FIG. 19.—THE HOP PLANT.

The auxiliary, or branch-buds, that is, the buds that are to make the new

branches, are found always on the sides of the stems. Now since these branch-buds form always just in the hollows of the leaves, it must follow, you see, that the branches of the plant will be arranged in the same order as that of the leaves. For example, if your little plant begins to form its leaves just opposite each other on the first stem, you know that by and by when it comes to branch, the branches will start out just opposite each other.

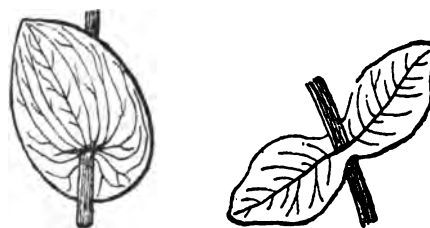


FIG. 20.

Or, if one leaf comes out on one side of the stem, and the next one a little higher up on the other side, and the next one higher still, but on the same side with

the first; or, if the leaves come all on one side of the stem, you may be sure the branches, if there ever are any, will be arranged in just the same way. (Fig. 20.)

Now, since branches follow the arrangement of leaves, let us see in how many ways leaves are arranged.



WHORLED LEAVES.

The ways you will hear most about will be :

1. *Opposite*. — One leaf on the same level with another, on opposite sides of the stems. (Fig. 19.)

2. *Alternate*. — One leaf above the other, first on one side, then on the other of the stem. (Fig. 18 and 20.)

3. *Whorled*. — Round the entire stem, almost like the petals of a corolla. (Fig. 21.)

MORNING GLORY.

Creeping through the casement,
Slanting to the floor in dusty, shining beams,
Dancing on the door in quick fantastic gleams,
Comes the new day's light, and pours in tideless
streams.

Golden Morning Glory.

In the lonely basement,
Rocking in the sun the baby's cradle stands;
Now the little one thrusts out his rosy hands;
Soon his eyes will open; then in all the lands
No such Morning Glory.

—H. H.

VI. — HOW LONG PLANTS LIVE, AND HOW OFTEN THEY BLOSSOM.

SOME plants live only a short time—a few months or a few weeks. Others live a thousand years, even.

Plants are divided into three classes, according to their duration.

1. *Herbs* are those plants the stems of which are not woody, and which die down to the ground, or die root and all, in or before the winter time.

2. *Shrubs* are those plants with woody stems, which live year after year through the winter, but which never grow to a very great height. Syringa and lilac bushes are shrubs.

3. *Trees* are woody plants, growing very high, having many branches, and living a great many years.

The height is the real distinguishing difference between a shrub and a tree.

Herbs are sub-divided into three classes also.

1. *Annuals*.—Herbs which grow from a seed, which grow up and blossom, and then die all in one year. A Morning-Glory is an illustration of this.

In our climate, such plants usually come up from the seed in the spring, blossom and ripen their seeds along through the summer, and die down in the autumn.

2. *Biennials*.—Those herbs which do not blossom at all the first year. They live through the first winter, blossom the

next summer, and then die down like the annuals when their seeds are ripened.

3. *Perennials*.—Those herbs which live on year after year as the trees and shrubs live on.

These perennial herbs die down to the ground when the winter comes on, but the roots keep alive and are ready to wake up and grow again when the pleasant spring sun and soft warm rains come again. The Hollyhock is a good illustration of a perennial.

PERENNIALS.

Precious the hardy green that frost survives;
Pleasant it is, when January's snow
Melts, for a space, and brooks resume their
flow,
To pass the garden paths where Primrose
thrives;
Where scarlet Columbine its honey hives
Safe 'neath the sod, shielding with leafage
low,
Its future flowers; where all the Violet's
glow
Lives in its leaves, eluding winter's gyves,
Sweeter and fairer than fair summer's brood,
Fancy sees here Heartsease and Violet,
And fringed Pink, in bursting calyx set;
And brave red Bergamot and quaint Monks-
hood,
Gold-powdered Snapdragon, Carnation fine,
And balmy bloom of Honeysuckle vine.

There are two perennials which grow quite commonly in the woods that can tell you for themselves just how many

years old they are. These are the Solomon's Seal and the Iris. (Figs. 1 and 2.)

Each year their root stretches itself along a certain distance and sends up a little shoot. The shoot grows up, blossoms, ripens, and dies down. Then all

there is left to tell its story is a little round scar on the root — the spot from which the shoot started. How many years old, think you, are these plants below — this Solomon's Seal and this Iris? (See Figs. 1 and 2.)

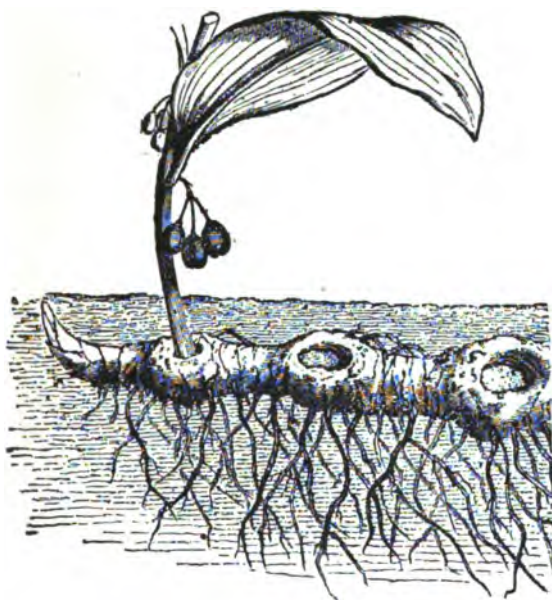


FIG. 1.—SOLOMON'S SEAL.



FIG. 2.—IRIS.

THE MONARCH OF THE WORLD.

On a very high mountain, way out in California, there grows a lonely little flower all by itself. There are no trees, no grass, no soil; and no moisture except the cold hail and snow and ice where it grows. Here it stands looking grand and proud. This little flower goes to sleep every night with a cap of ice on its head, and in the morning when the sun

comes up, its little face is dripping with icy tears of opal and pearl. It is shaped like a bell-flower and has purple and red and blue colors. It is called "Jacob's Ladder." It is, also, called the "Monarch of the World," because it blooms there alone with no other flowers for company, no, not even a bird or insect to talk with a single minute of the year.

JACK IN THE PULPIT.



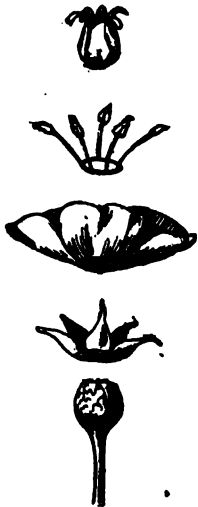
JACK in the pulpit
 Preaches to-day
 Under the green trees
 Just over the way.
 Squirrel and song-sparrow
 High on their perch,
 Hear the sweet lily-bells
 Ringing to church.
 Come, hear what his reverence
 Rises to say
 In his low, painted pulpit,
 This calm Sabbath day.
 Fair is the canopy
 Over him seen,
 Pencilled by Nature's hand,
 Black, brown, and green.
 Green is his surplice,
 Green are his bands;
 In his queer little pulpit,
 The little priest stands.
 In black and gold velvet,
 So gorgeous to see,
 Comes with his bass voice,
 The chorister bee.
 Green fingers playing
 Unseen on wind-lyres,
 Low singing-bird voices, —
 These are the choirs.
 The violets are deacons,
 I know by the sign
 That the cups which they carry,
 Are purple with wine.
 And the columbines bravely
 As sentinels stand,
 On the lookout with all their
 Red trumpets in hand.
 Meek-faced anemones,
 Drooping and sad;
 Great yellow violets
 Smiling out glad;
 Buttercup's faces,
 Beaming and bright —
 Clovers with bonnets —
 Some red and some white;
 Daisies, their white fingers,
 Half clasped in prayer;
 Dandelions, proud of

The gold in their hair;
 Innocents, children,
 Guileless and frail,
 Meek little faces
 Upturned and pale;
 Wildwood geraniums,
 All in their best,
 Languidly beaming
 In purple gauze dressed.
 All are assembled
 This sweet Sabbath-day
 To hear what the priest
 In his pulpit will say.
 Look! white Indian pipes
 On the green mosses lie!
 Who has been smoking
 Profanely, so nigh?
 Rebuked by the preacher
 The mischief is stopped;
 But the sinners in haste
 Have their little pipes dropped.
 Let the wind with the fragrance
 Of fern and of birch
 Blow the smell of the smoking
 Clean out of our church!

So much for the preacher:
 The sermon comes next —
 Shall we tell how he preached it,
 And where was his text?
 Alas! like too many
 Grown up folks who play
 At worship in churches
 Man builded to-day —
 We heard not the preacher
 Expound or discuss;
 But we looked at the people
 And they looked at us.
 We saw all their dresses,
 Their colors and shapes;
 The trim of their bonnets,
 The cut of their capes;
 We heard the wind organ,
 The bee and the bird,
 But of Jack-in-the-Pulpit
 We heard not a word.

—CLARA SMITH.

VII.—EXERCISE PREPARATORY TO ANALYSIS.

	
<p>Kind of pistil.</p> <p>How many stamens.</p> <p>How many petals.</p> <p>Parts of calyx.</p> <p>Color.</p> <p>Position of ovary</p> <p>Single or group.</p> <p>Stamens where.</p>	

VIII.—KINDS OF ROOTS, AND STEMS, AND LEAVES.

ROOTS.

IN order that a plant should grow at all, there must be a root by which to drink in the food from the earth; a stem to bear up the foliage and through which the root can send up its food; and leaves which can spread themselves out and drink in the food from the sun and the air.



FIG. 1.—TAP-ROOT OF TANKARD TURNIP.

Roots are the simplest to study, for they have few variations.

The primary root, or first root, is the

one that started first from the seed, when your plant first began to grow. (Fig. 1 and 2.) But sometimes in *some* plants, if a branch happens to be flattened down (See Couch Grass, Page 29—Fig. 3.) So that, for a long time, a bit of it is covered over with earth that branch will send out little roots of its own as if to say, "Very well, since I cannot stand up in the bright sunlight



FIG. 2.—FIBROUS ROOT OF MELON.

with my brother-branches, I'll start a root of my own here, and forget all about the other root from which I started."

That, too, is what the little "slip" says

to itself when you tear it away and give it to your little friend. Instead of being cross and sulky because you took it away, it raises its little head and says "Now if you will give me good water and the sunlight, or good moist earth and the sunlight, I'll strike out some roots of my own. I will grow large and strong, and will, by and by, show you some beautiful flowers."



FIG. 3.—COUCH GRASS.

There are other roots, too, called air-roots. These are little rootlets which grow out along the stems of vines by which they are able to climb. (Fig. 4.) You can see them very plainly on the English Ivy or the Poison Ivy or the Trumpet-Creeper. These little hands reach out from the vine and seize upon the wall or tree upon which the vine is growing, and so hold it up in place.

When these rootlets strike into the wood of whatever tree they are climbing upon, and feed upon the sap of that tree,

the plants to which the rootlets belong are called parasites. Remember that name, for you will often hear it outside of Botany as well as in Botany. You will often hear a certain kind of people called parasites. I wonder if there are any parasites in your school-room? Have you any one there who is too lazy to do



FIG. 4—IVY.

his own work; who "sponges," as you boys say, his answers from any body who will help him; who expects his teacher to put knowledge into his head while he sits yawning; who expects his father to clothe him and his mother to feed him and his sister to wait upon him while he himself does nothing at all? Such a boy as that is a real parasite indeed. And you may be sure he will grow to be just such a weak, good-for-nothing as the floral parasite is. The Dodder is the most common parasite, perhaps, in our country. It has a sickly-looking, yellowish stem, looking as much like a long string of worsted as anything I can think of, twining itself around any thing that will hold it up. It has no leaves

because, you see, as it steals its food from other plants it doesn't need to have leaves of its own to take in the air and sunlight.

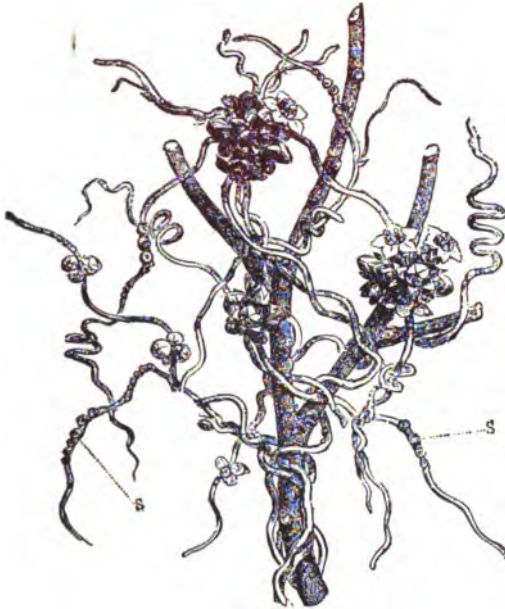


FIG. 5.—DODDER PLANT.

All the hues
The rainbow knows, and all that meets the eye
In flowers or field and garden, join to tell
Each tree's close-folded secret.

There is another class of plants which grow upon trees or upon fallen logs in the forests. They are not parasites though, for they do not steal from the tree upon which they rest. They are "air plants," so called. Here is a picture of an Orchid, or an air-plant which will show you how they twine themselves. These grow in warm countries only, and are seen here only in hot-houses.



AIR PLANTS OF THE ORCHIS FAMILY.

SONG.

Sing, little bird, O sing!
How sweet thy voice and clear!
How fine thy airy measures ring,
The sad old world to cheer!

Bloom, little flower, O bloom!
Thou makest glad the day;
A scented torch, thou dost illumine
The darkness of the way.

Dance, little child, O dance!
While sweet the small birds sing,
And flowers bloom fair, and every glance
Of sunshine tells of Spring.

O bloom, and sing, and smile,
Child, bird, and flower, and make
The sad old world forget a while,
Its sorrow for your sake!

CELLA THAXTER.

KINDS OF STEMS.

Though there are many kinds of stems, we will speak here only of a few.

1. **ERECT OR UPRIGHT STEM.**—One which grows directly upward or nearly so.

2. **DECUMBENT.**—One which first lies on the ground as if too weak to stand, and then turns upward at the end.

3. **TRAILING.**—One that lies its entire length along the ground.

4. **CREEPING OR RUNNING.**—One that trails along on the ground and here and there sends down roots.

5. **CLIMBING.**—One that as it rises, lays hold upon something to keep it from falling.

6. **TWINING.**—One that coils itself round and round its support.

Then there are some stems so strange shaped that you would hardly think of them as stems at all.

We call such stems when we find them on rose-bushes, **THORNS**; when we find them on blackberry-vines, **BRIERS**.

Then there are those funny little curly stems on the grape-vine which we must now call **TENDRILLS**.

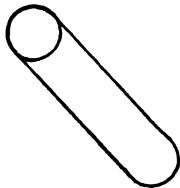
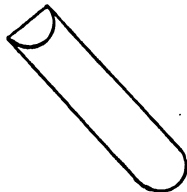
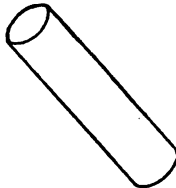
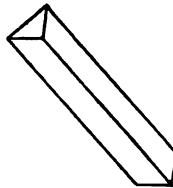
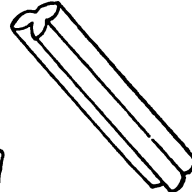
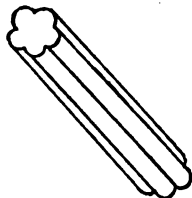
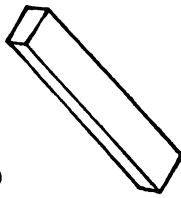
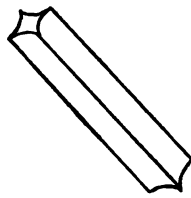
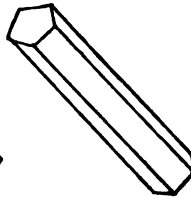
SHAPES OF STEMS.**ROUND.****FLATTENED.****HALF-ROUND.****TRIANGLED.****ACUTE-ANGLED.****FLUTED.****SQUARE-ANGLED.****FOUR-SIDED.****FIVE-ANGLED.**



FIG. 8.

KINDS OF LEAVES.

AND such a variety of leaves! Every plant has a leaf of its own, just as much as every one of you have a nose of his own different from every other nose in the school-room. We hear quite a little about the kinds of noses. There are the turned-up noses, and the peaked noses, the pug-noses and the Grecian noses; but although it is all very funny no doubt, noses are not one half so interesting for an every day study, as leaves are.

To begin with, every leaf has a blade, (1) a foot-stalk (2) and two little stipules (3) at the base of the foot-stalk. Fig. (8.)

Leaves have also, a MID-RIB which runs up through the centre of the leaf from the foot-stalk to the point of the leaf.

Then running out on either side from the mid-rib are little lines called VEINS; from the veins, too, are still smaller lines run out, these are called VEINLETS.



FIG. 9.—LILY OF THE VALLEY.

When these veins and veinlets branch in all directions as in (Fig. 8), the leaves are called *netted-veined*.

But in some leaves the mid-rib and the veins all run in one direction. Such leaves are called *parallel-veined*. (Fig. 9. Lily of the Valley).

THE NASTURTIUM (*Orange.*)

I am the gay Nasturtium.
I bloom in gardens fine,
Among the garden flowers
My slender stalk I twine.
Bright *orange* is my color —
The eyes of all to please —
I have a tube of honey
For all the bees.

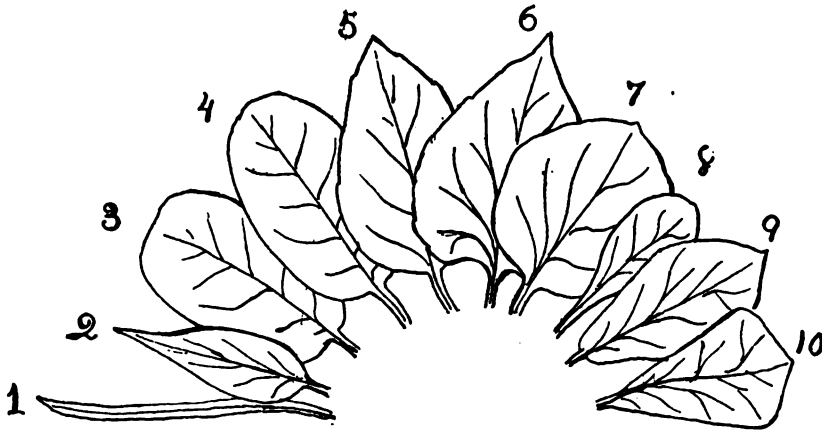
THE HONEYSUCKLE (*Red.*)

I am the *Honeysuckle*,
With my drooping head:
And early in the spring-time
I don my dress of *red*.
I grow in quiet woodlands,
Beneath some budding tree;
So when you take a ramble
Just look for me.

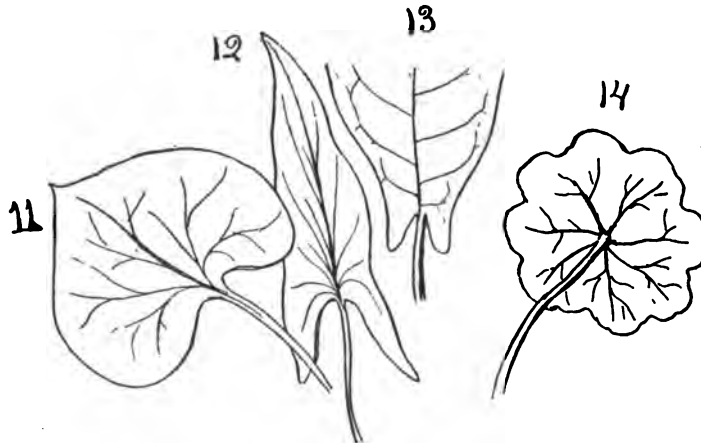
SHAPES.

As to the shapes of leaves, I hardly dare tell you how many there are lest you be discouraged!

Here are the most common ones, and the ones with the easiest names.

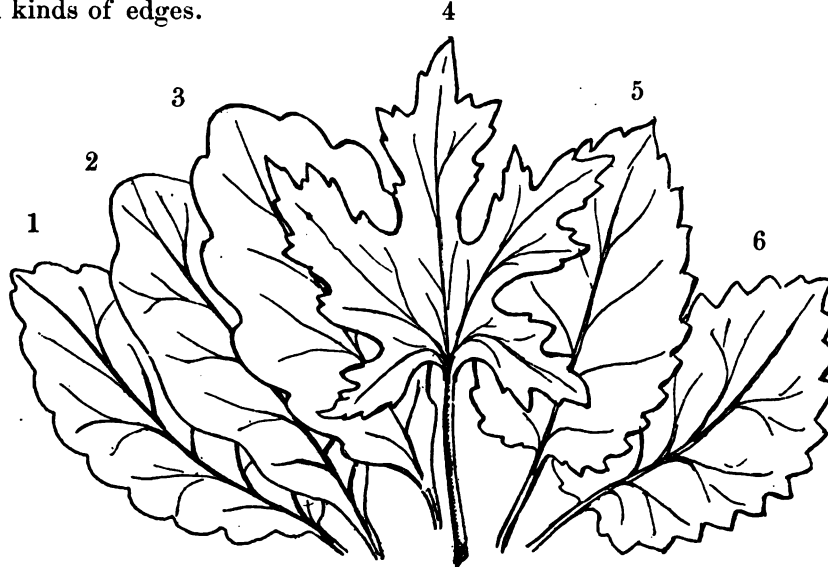


- | | |
|----------------------------------|----------------------------|
| 1. Linear — like straight lines. | 6. Heart-shaped. |
| 2. Lance-shaped. | 7. Round. |
| 3. Oblong. | 8. Spatulate. |
| 4. Oval. | 9. Reversed-ovate. (See 5) |
| 5. Ovate. | 10. Wedge-shaped. |



- | | |
|--------------------|--------------------|
| 11. Kidney-shaped. | 13. Ear-shaped. |
| 12. Arrow-shaped. | 14. Shield-shaped. |

Did you ever notice the difference in the edges of leaves. These six are the common kinds of edges.



1. Scalloped.

2. Very wavy.

3. Wavy.

4. Jagged.

5. Saw-toothed.

6. Dentate (pointing outward.)

All these have been simple leaves ; but sometimes they are so very jagged, or so very much divided into parts all growing from one mid-rib, that they are called compound leaves, and the little parts that make up the compound leaf are called leaflets, that is, little leaves. (Figs. 4, 5, and 6).



FIG. 4.



FIG. 5.



FIG. 6.



A THISTLE'S TALK.

ERE, children, is a gentleman who has a great deal to say for himself;" said Miss Green, holding up a large Canada Thistle before the class. "You may ask questions and I will

answer for him."

The children, of course were delighted and Kate at once asked:

"What is your name, sir?"

"My family name is so long and hard I fear you would not remember it, so I will tell you my other name, which is Blessed Thistle."

"Blessed Thistle," interrupted Frank, "how did you get that name?"

"Well, I'll tell you. A little girl was sick once, and her mother gave her many kinds of medicine but she only grew worse. An old woman came to the door one day and told her that if she would take a large thistle that was in the garden, steep it and give the child some of the tea, it would cure her. She did so; and the little girl got well. After this many others tried it, and it cured so many that the Thistle came to be called Blessed Thistle."

"What makes you wear so many prickles, Mr. Thistle? We should like you much better if you did not hurt us so when we touch you," said Fanny.

"That is just why we wear them, Miss

Fanny. We wear prickles so that people will not touch us."

"But the farmer is always trying to kill you. Why is this?"

"Well, you see he doesn't like to have us in his hay and oats, because we are not very good for his horses and cattle to eat. And then it makes him so angry to get one of the prickles in his thumb. He calls us hard names and would kill every one of us if he could."

"But the Bumble-bee comes to see you very often; he doesn't mind the prickles," observed Ned.

"No, we are careful never to give offence to Mr. Bumble-bee. We invite him to come and see us every day. We keep honey for him when he comes, and we wear our purple dresses on purpose to attract his attention."

"Why are you so partial, Mr. Thistle?"

"Because the Bumble-bee brings us something that we want."

"What is that, please?"

"Just look into one of our little flowers and you will see some yellow dust. It is this that smells so sweet. When Mr. Bumble-bee goes to see my neighbor he gets some of this sweet-smelling dust showered upon him—a delicate little attention on the part of my neighbor, you see, to perfume Mr. Bumble-bee's coat."

"Well, Mr. Bumble-bee comes to see me, and the dust on his coat is just what I want to make my seeds ripen."

"So I brush it off and shower some more upon him so that he will take no offence when he goes away."

"Where do you live, Mr. Thistle?"

"Wherever I can find a place to grow in meadows, in grain fields and by the roadside, Truly, we have a hard time to live anywhere, we are so abused by everybody. Thousands of us are killed every day; and in some places boys are hired to kill as many of us as they can."

"Well, you see when one of us does get a chance to grow, we put in a large crop of seeds, and some of these manage to fly to a good safe place for another year."

"Fly! Mr. Thistle, why, how can your seeds fly?"

"Didn't you ever see one of our seed-balloons floating around in the air? Perhaps you have, but didn't know what it was."

"When a seed is ripe, its balloon is all ready, and the first puff of air carries it a long way from its old home. When it drops, if it happened to find a bit of soft earth, it sinks down in it, and then, sir, can you tell what happens?"

MRS. JUNE'S PROSPECTUS.



RS. June is ready for school,
Presents her kind regard,
And for all her measures and
rule
Refers to the following

CARD

To parents and friends: Mrs. June,
Of the firm of Summer and Sun,
Announces the opening of her school,
Established in the year one.

An unlimited number received;
There is nothing at all to pay;
All that is asked is a merry heart,
And time enough to be gay.

The Junior class will bring,
In lieu of all supplies,
Eight little fingers and two little thumbs
For the making of pretty sand-pies.

The Senior class, a mouth
For strawberries and cream,
A nose apiece for a rose apiece,
And a tendency to dream.

The lectures are thus arranged:
Professor Cherry Tree

Will lecture to the Climbing Class,
Terms of instruction — free.

Professor De-Forest Spring
Will take the class on Drink;
And the class in Titillation,
Sage Mr. Bobolink.

Young Mr. Ox-Eye Daisy
Will demonstrate each day
On Botany, on native plants,
And the properties of hay.

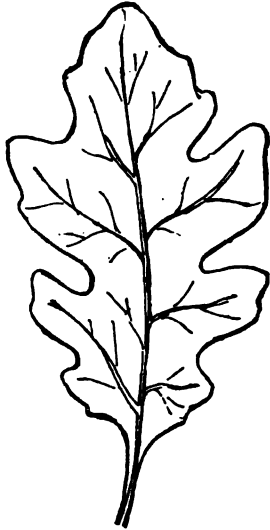
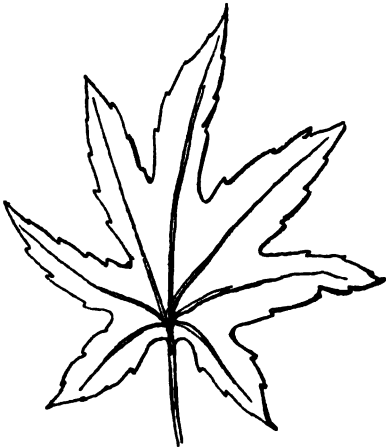
Miss Nature, the class in Fun
(A charming class to teach);
And the Swinging class and the Bird-nest
class
Miss Hickory and Miss Beech.

And the Sleepy class at night,
And the Dinner class at noon,
And the Fat and Laugh and Roses class,
They fall to Mrs. June.

And she hopes her little friends
Will be punctual as the sun;
For the term, alas! is very short,
And she wants them every one.

— SUSAN COOLIDGE.

IX.—EXERCISE PREPARATORY TO ANALYSIS.

	
<p>Kind — Veins — Edges — Shape of Base — Shape of Apex — Lobes — Shape — Stipules — Color — Surface.</p>	

THE LITTLE FERN.



GREAT many centuries ago, when the earth was even more beautiful than it is now, there grew in one of the many valleys a dainty little fern leaf.

All around the tiny plant were many others, but none of them so graceful and delicate as this one I tell you of. Every day the cheery breezes sought out their playmate, and the merry sunbeams darted in and out, playing hide-and-seek among reeds and rushes; and when the twilight shadows deepened, and the sunbeams had all gone away, the little fern curled itself up for the night with only the dew drops for company.

So day after day went by; and no one knew of, or found the sweet wild fern, or the beautiful valley it grew in. But, — for this was a very long time ago, — a great change took place in the earth; and rocks and soil were upturned, and the rivers found new channels to flow in.

Now when all this happened, the little fern was quite covered up with the soft moist clay, and perhaps you think it might as well never have lived as to have been hidden away where none could see it.

But after all, it was not really lost; for hundreds of years afterwards, when all that clay had become stone, and had broken into many fragments, a very wise and learned man found the bit of rock upon

which was all the delicate tracery of the little fern leaf, with outline just as perfect and lovely as when, long, long ago it had swayed to the breezes in its own beautiful valley.

And so wonderful did it seem to the wise man, that he took the fern leaf home with him and placed it in his cabinet where all could admire it; and where, if they were thoughtful and clever enough, they could think out the story for themselves and find the lesson which was hidden away with the fern in the bit of rock.

Lesson! did I say? Well let's not call it a lesson, but only a truth which it will do every one of us good to remember; and that is, that none of the beauty in this fair world around us, nor anything that is sweet and lovely in our own hearts, and lives, will ever be useless and lost. For, as the little fern leaf lay hidden away for years and years, and yet finally was found by the wise man and given a place with his other rare and precious possessions where it could still, though silently, aid those who looked upon it; so we, as boys and girls, men and women who are to be, can now, day by day, cultivate all lovely traits of character, making ourselves ready to take our place in the world's work. And when that time comes we shall not only be able to aid others silently, as did the little fern, but may also, by word and deed, lend a hand to each and every one around us.

Where the copse-wood is the greenest,
Where the fountain glistens sheenest,

Where the morning dew lies longest,
There the lady fern grows strongest.

—WALTER SCOTT.

TRACING EXERCISE.



Nothing fixes a picture in our mind like an exercise in tracing. Place over these leaves some thin tissue paper; or better still, if you can get it, some artist's "tracing paper." Can you tell the kind of leaves these are?

THE VIOLET.

Down in a green and shady bed
A modest violet grew ;
Its stalk was bent ; it hung its head,
As if to hide from view.

And yet it was a lovely flower,
Its colors bright and fair !

It might have graced a rosy bower,
Instead of hiding there.

Yet there it was content to bloom,
In modest tints arrayed,
And there diffused its sweet perfume,
Within the silent shade.

— JANE TAYLOR.

X.—HOW FLOWERS ARE ARRANGED ON STEMS.

WE learned that leaves are arranged either opposite, alternately, or whorled ; that there are branch-buds, and end-buds.

Now in the same way there are branch-flowers and end-flowers.

The little violet is a good example of an end-flower. (Fig. 1.)

Here, too, is a common little branch

that shows you plainly how these flowers started out just where the little branch-buds were nestled down in the hollow in the leaf. (Fig. 2.)

Both these are single-flowers. Let us see how the clustered-flowers grow.

1. A **RACEME** is a cluster of flowers arranged along the sides of a stem, as shown in the following illustration. (Fig. 3.)



FIG. 1.—SWEET VIOLET.



FIG. 2.—AXILLARY FLOWER.



FIG. 3.—RACEME.

2. A **CORYMB** is a cluster of flowers starting at different places along the stem, and all standing finally at the same level. (Fig 4.)



FIG. 4.—CORYMB.

3. **THE UMBEL** at first glance looks like a Corymb; but in the umbel the



FIG. 5.—UMBEL.

flowers all start from the same place on the stem. (Fig. 5.)

LITTLE ANEMONE.

Little anemone,
So frail and so fair,
Blooming so brave,
In the cold spring air.

Sweet little messenger,
Coming to tell
Summer is coming,
And all will be well.

Out of the darkness,
Springing to life,
So brave though so tiny,
'Midst this great world of strife,

Standing so firm,
Though swayed by the breeze,
Seeming to say
By its pure petaled leaves

Out of the darkness,
Shall come forth light,
God in His wisdom,
Has made day and night.

Out of the darkness,
This white thing is born;
Out of the shadows
Breaketh life's morn.

Little anemone;
Great is thy part;
By thy silence and faith,
Thou many lessons impart.

—HENRIETTA S. PIKE.

4. A **HEAD** is a cluster of little flowers with short stems; making a ball-shaped blossom. The clover is a good example. (Fig. 6.)



FIG. 6.—CLOVER.

5. A **SPIKE** is a cluster of flowers arranged up and down a stalk much as they

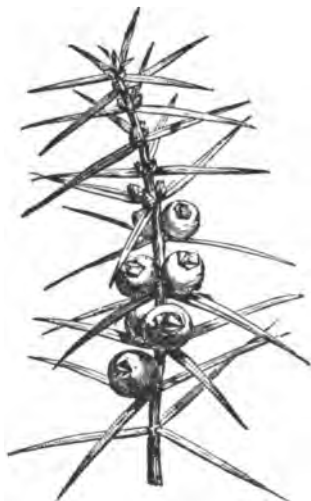


FIG. 7.—SPIKE.

are in a raceme; but in this, the flowers are closer together, so close that some-

times they seem almost crowded. Then, too, these flowers have no pedicles, or at least very short ones, and so nestle down very close to the main stem. (Fig. 7.)

6. A **CATKIN** is a blossom enclosed in little hard shells which are called bracts. The "Pussy Willow," is the catkin most familiar to little folks. Those long "cat-tails" of the Poplar, the Alder and the Birch are *catkins*, too. (Fig 8.)

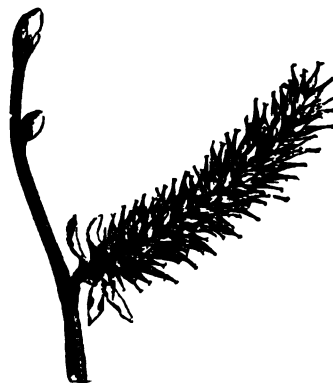


FIG. 8.—CATKIN OF THE WILLOW.

7. A **SPADIX** is a spike having the flowers crowded very, very closely together.

In the "Jack-in-the-Pulpit," you will find down in the floor of the pulpit a spadix. The "Cat-o'-nine-Tails," too, and the Plantain are good examples of the Spadix.

PUSSY WILLOW'S HOOD.

All winter, Pussy Willow has been shut up in her house by the brook; but one bright spring morning she opened the door and stepped out. None of the flowers were up yet; the brook, the birds,

the buds and a few grass blades were the only friends she saw.

"Why, whom have we here" asked the Brook in surprise," Mistress Pussy Willow, as I live. Good morning, Pussy, you are up bright and early, but why do you wear that fur hood? Summer is coming, and every day grows warmer!"

"O Mother Nature told me to keep it on, lest I get a toothache."

Everybody was glad to see Pussy. They all had something to say to her, but they were all curious to know why she had on that fur hood. Poor Pussy! she was tempted to take it off, they all said so much about it; but she didn't.

To make matters worse, Mr. Robin

whispered some sly things to Pussy's friends, and the next morning when Pussy came out, the birds, the buds, the grass and the brook began to shout, "Bald head, bald head, Pussy Willow has to wear a wig because she has no hair. Pussy Willow is a cheat."

Pussy felt very badly but all she said was, "Wait and see."

One morning after this every one had a surprise. There was Pussy Willow with no fur hood on her head, but bright golden curls dancing up and down in the breeze.

"Pussy is not a bald head. She has long golden curls," cried all her friends, and mischief-making Mr. Robin went and hid his head for shame.

WHAT THE BURDOCK WAS GOOD FOR.

"Good for nothing," the farmer said,
As he made a sweep at the burdock's head;
But then, he thought it was best, no doubt,
To come some day and root her out.
So he lowered his scythe, and went his way,
To see his corn, or gather his hay;
And the weed grew safe and strong and tall,
Close by the side of the garden wall.

"Good for home," cried the little toad,
As he hopped up out of the dusty road.
He had just been having a dreadful fright,
The boy who gave it was yet in sight.
Here it was cool and dark and green,
The safest kind of a leafy screen.
The toad was happy; "For," said he,
"The burdock was plainly meant for me."

"Good for a prop," the spider thought,
And to and fro with care he wrought,
Till he fastened it well to an evergreen,
And spun his cables fine between.

'Twas a beautiful bridge, — a triumph of skill,
The flies came 'round, as idlers will;
The spider lurked in his corner dim;
The more that came, the better for him.

"Good for play," said a child, perplexed
To know what frolic was coming next.
So she gathered the burrs that all despised,
And her city playmates were quite surprised
To see what a beautiful basket or chair
Could be made, with a little time and care.
They ranged their treasures about with pride,
And played all day by the burdock's side.

Nothing is lost in this world of ours;
Honey comes from the idle flowers;
The weed which we pass in utter scorn,
May save a life by another morn,
Wonders await us at every turn.
We must be silent and gladly learn.
No room for recklessness or abuse,
Since even a burdock has its use.

— A. S. R.

X.—ODDITIES AMONG FLOWERS.

ALL the people you might see walking along your streets if you were to watch for a whole week, would look pretty much alike; that is, you would never mistake one of them for a horse or a cow, or a house or a wagon. You would always know they were all people—human beings, no matter what little difference you might see in them. One might be tall, another short, one of light complexion, another dark, one might have two arms, another only one.

So with flowers. Speaking of flowers as a whole, we say all perfect flowers have a corolla, a calyx, stamens, a pistil, pollen and a seed vessel. Very true; but we must allow for a great deal of variety in the arrangement of these, just as we allow for variety of people. Else we shall have all our flowers looking just alike, as we should have all our people looking alike.

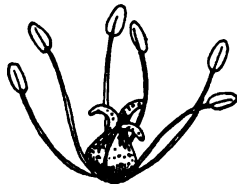


FIG. 1.—LIZARD'S TAIL.

Let us see what some of these differences are.

1. A complete flower is one which has corolla, calyx, stamens and pistil.

2. An incomplete flower is one in which some one or more of these are lacking. The little Anemone is an incomplete flower, for it has no corolla. The little white petals (as you supposed they were) are the calyx after all. There is



FIG. 2.—CHERRY.



FIG. 3.—HAWTHORN.

an odd-looking flower called Lizard's Tail, that has neither corolla or calyx. (Fig. 1.)

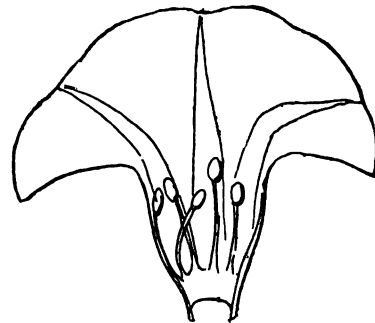


FIG. 4.—MORNING-GLORY.

Some flowers have separate petals which you can easily pull off one by one. The Daisy is a good example of this.

Others have all the parts of their corolla grown together, as in the Morning-

Glory. Some have a part of their petals one shape, others another.


Some have their stamens all separate; others have them all grown together. Some have one pistil, others have many, and these may be separate or all grown together.

Sometimes the stamens grow upon the seed vessel; sometimes they grow out from the corolla, as in the Cherry, the

Hawthorn, and the Morning-Glory.

All these little differences you will need to know when you try to use the "Flora," else you will be mixing the children of the great flower families in a most pitiful way; for I fancy we must be as careful to keep these children in their right families, and with their own friends, as you would wish your teachers and parents to be, to keep you in your right homes.

THE STORY OF THE PINE TREE.

O you know why the Pine is so sad a tree? Let me tell you her story. No; she will sing it herself, if you will listen to the night-song. "Long, long ago I had my home on the island of an ocean, and my branches swayed and sang to the waves that kissed my feet with the fondness of a betrothed lover. The winds were jealous of our happiness, and blew away from me the germs of life. My seeds sprang up again, but on foreign soil; and the new trees, my offspring, are the same in color and form, but their souls are all sad from their memories of departed joy."

When the slightest breeze comes near, and ventures to softly touch the branches, a sound like sobbing follows; but when, with rougher grasp, the east wind approaches, a wailing like the sounds of a storm-tossed sea is heard. Listen! do you hear it now? It is the imprisoned spirit of the Pine, longing for the waves. How am I sure the tree is alive and friendly? Doesn't it bow to you when you pass, and curve and sweep before you? Doesn't it offer you rest and refreshment in its shade? Doesn't it entertain you by showing you beautiful pictures and forms, and doesn't it furnish you with music?

See what a teacher it is! Up there among the

trees are many lessons. Its trunks and limbs look honest and courageous, firm and strong, while all its lofty, tapering height points Godward. It is your confidant; and the more you tell it, the more you will find to say. While it is very modest and retiring, requiring time to get acquainted with you, still, the more it talks to you, the more you will want to hear. The pine is your school-master, and you are the royal pupil,—Roger Ascham and Queen Elizabeth. It is no longer an ordinary tree, but something born with a spirit in it; and it has birthdays. Thoreau, the man who loved Nature so much that the birds and the fishes took care of him and were never afraid of their master, used to visit certain trees on certain days in the year. The Pine has a birthday worth celebrating in December, the Maple in October, and the Birch in May.

You think this is all fancy, and believe persons must be very imaginative to find such friends in Nature? Oh, no; along with fancy, Nature tucks very real things into our thoughts about her. You only need an introduction to her, and you will see for yourselves. The most practical among you will find that even fancy is a most useful quality, because it leads men to think out great truths.

From "*Hold up Your Heads, Girls.*"

—ANNIE H. HYDER.

XI.—THE FRUIT AND THE SEED.

FIRST the stem and the leaves, then the flower, then the fruit. The corolla has fallen off, and the plant which has been so beautiful to the eye, now goes to work to do something which in many plants proves very pleasing to the taste. That is, it goes to work to produce its fruit. As you have read before, the ovary now becomes larger and larger, jucier and jucier, until you say, when you spy it at last among the branches, "O, see the pears!" or the apples! Or if it is the fruit of a low shrub, you say, "O, see the berries!"

All fruits, however, are not pleasant to eat. The little red berry, the fruit of the rose-bush, I am afraid would hardly taste as pleasant to you as the little red berry of the raspberry bush. Still both are fruits.



FIG. 1.—STRAWBERRY. (FLESHY.)

The principal kinds of fruits are :

1. **FLESHY FRUITS** —like the berry, the apple, the pear. (Fig. 1).

2. **DRY FRUITS** —like the grain, nuts, and keys. (Fig. 2, 3, 4).

4. **STONE FRUITS** —like the plums, cherries, peaches.

Can you trace the fruits given here?



FIG. 2.—OATS. (DRY.)

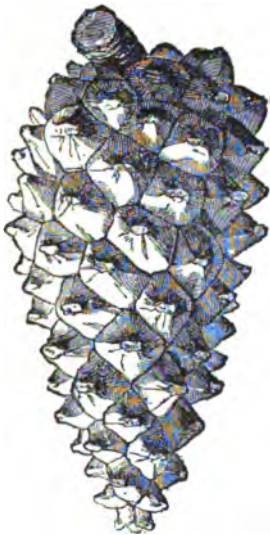


FIG. 3.—CONE. (DRY.)



STONE FRUIT.—CHERRIES.



FIG. 4.—POPPY. (DRY.)

XII.—REVIEW LESSON.



I WONDER if you are ready to tell something about each word in this table? If you are I am sure you are ready to go out into the fields with your teacher and do just what your big brothers and sisters do at the High School—"analyze flowers." People who had charge of the schools used to think that all these pleasant things about the flowers, the stars, the rocks and the animals must be kept hidden away from pupils until they were "grown-up." But we are beginning to learn now-a-days that little people are just as wide awake to the beautiful things in the world as "grown up" people are—indeed, they are often a great deal more awake.

A PLANT IS MADE UP OF

Root, Stem, Leaves.

WHAT PLANTS DO.

Plants grow.
Plants flower.
Plants form seeds from which new plants grow.

PARTS OF A FLOWER.

Calyx, with its sepals.
Corolla with its petals.
Stamens with its filament and anthers.
Pistil with its style and stigma.
Ovary or seed-vessel.
Pollen.

THE PLANTLET HAS

Cotyledons, Radicle, Plumule.

TWO CLASSES.

Monocotyledons. Dicotyledons.

STEMS.

Simple, Branching,
End-buds, Branch-buds.

ARRANGEMENTS OF LEAVES.

Opposite. Alternate. Whorled.

KINDS OF PLANTS.

Herbs, Shrubs.
Trees. Annuals.
Biennials. Perennials.

KINDS OF ROOTS.

Primary, Secondary.

KINDS OF STEMS.

Upright,
Decumbent,
Trailing,
Creeping or running,
Climbing,
Twining,
Thorns and briars.

PARTS OF LEAVES.

Blade,
Rib,
Vein,
Foot-Stalk,
Stipule.

VEINING OF LEAVES.

Netted-veined, Parallel-veined.

KINDS OF LEAVES.

Simple. Compound.

SHAPES OF LEAVES.

Linear,
Lance,
Oblong,
Oval,
Ovate,
Heart,
Round,
Spatulate,
Reversed-ovate,
Wedge-shaped,
Kidney,
Arrow,
Ear,
Shield.

EDGES OF LEAVES.

Saw-toothed,
Dentate,
Scalloped,
Wavy,
Very wavy,
Jagged.

ARRANGEMENT OF FLOWERS.

End-flowers, Corymb, Spike,	Branch-flowers, Umbel, Catkin,	Raceme, Head, Spadix.
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FRUITS.

Fleshy, Dry, Stone.

A LITTLE POET.

Out in the garden, wee Elsie
 Was gathering flowers for me;
 "O, mamma," she cried, "hurry, hurry,
 Here's something I want you to see."
 I went to the window. Before her
 A velvet-winged butterfly flew,
 And the Pansies themselves were not brighter
 Than the beautiful creature in hue.

"O, isn't it pretty?" cried Elsie,
 With eager and wondering eyes,
 As she watched it soar lazily upward
 Against the soft blue of the skies.
 "I know what it is, don't you, mamma?"
 O, the wisdom of these little things
 When the soul of a poet is in them,
 "It's a Pansy—a Pansy with wings."

—EBEN E. REXFORD.

THE STORY OF THE SEED LEAVES.

MANY years ago there was a great commotion among the trees and vines in a certain garden. The pea vines were rustling, the apple trees scolding, the grape vines weeping, and all cried — "What a shame!"

Presently Mother Nature, walking into the garden, said — "What is all this noise about?"

There was silence a moment and then Mrs. Bean spoke up and said, "We think it is cruel of you, Mother Nature, to ask us to throw our poor, helpless children on the cold, hard earth, and leave them to take care of themselves. The horses, the cattle, the bears, and hundreds of other creatures take care of their babies and keep them warm and feed them, but we must leave ours to starve;" and tears started afresh from the eyes of all.

"Now," said Mother Nature, "listen to me. What you wish to do is impossible. How can a young bean fasten itself to your vines, Mrs. Bean? or a young apple

tree to your dry limbs, Mrs. Pippin? Even were it possible, the frost would kill them. You see it is necessary that they begin to fasten their roots in the earth. Now, if you are afraid that they will die before they can do this, I will tell you what can be done."

All the trees and vines then shook up their leaves and listened intently. "You may prepare a warm blanket to wrap around your babies, and inside of this blanket you may put as much food as you think necessary for them, until their roots are long enough to reach into the ground. Now let me hear no more complaints."

There was, now, great rejoicing and rustling among the vines and trees and each one began to collect stores of food, prepare warm blankets for their little ones, and to wrap around them.

When these were ready the cautious mothers, with anxious sighs, bade the baby seeds farewell, and dropped them down to the earth to begin life for themselves.

WHY THE FLOWERS BLOOM ONLY HALF THE YEAR.

MOTHER Ceres was exceedingly fond of her daughter Proserpina, and seldom let her go alone into the fields. But, just at the time when my story begins, the good lady was very busy, because she had the care of the wheat, and the Indian corn, and the rye and barley, and, in short, of the crops of every kind, all over the world; and as the season thus far had been unusually backward, it was necessary to make the harvest ripen more speedily than usual.

"Dear mother," said Proserpina, "I shall be very lonely while you are away. May I not run down to the sea-shore, and ask some of the nymphs to come up out of the waves and play with me?"

"Yes, child," answered Mother Ceres. "The sea-nymphs are good creatures and will never lead you into any harm. But you must take care not to stray away from them, and go wandering about the fields by yourself. Young girls without their mothers to take care of them, are apt to get into mischief." The child promised to be as prudent as if she were a grown-up woman, and, by the time the winged dragon had whirled the car out of sight, she was already on the shore, calling to the sea-nymphs to come and play with her.

By way of showing her joy, the child asked them to go with her a little way into the fields, to gather abundance of flowers, with which she would make each

of her playmates a wreath. "Oh no, dear Proserpina," cried the sea-nymphs, "we dare not go with you upon the dry land. We are apt to grow faint, unless at every breath we can sniff up the salt breeze of the ocean.

"It is a great pity," said Proserpina. "But do you wait for me here, and I will run and gather my apron full of flowers, and be back again before the surf-wave has broken ten times over you.

"We will wait, then," answered the sea-nymphs. "But while you are gone, we may as well lie down on a soft sponge, under the water." The young Proserpina ran quickly to a spot where only the day before, she had seen many flowers. Soon her apron was filled and brimming over with blossoms; when, suddenly seeing a large shrub covered with magnificent flowers, she seized it and pulled and pulled; but was hardly able to loosen the soil about its roots. Again she pulled with all her might, and noticed that the earth began to crack and stir to some distance around the stem. She pulled a third time, but relaxed her hold, thinking she heard a rumbling sound beneath her feet. Laughing at herself for so childish a notion, she made another effort; up came the shrub, and Proserpina staggered back, surprised at the deep hole which its roots had left in the soil.

Much to her astonishment the hole kept growing larger, and deeper and deeper, until it really seemed to have no bottom; and all the while, there came a

rumbling noise out of its depths, louder and louder, nearer and nearer, and sounding like the tramp of horses' hoofs and the rattling of wheels. Too frightened to run away, she waited and soon saw a team of four sable horses, snorting smoke out of their nostrils, and tearing away out of the earth with a splendid golden chariot whirling at their heels.

In the chariot sat the figure of a man richly dressed, with a crown on his head, all flaming with diamonds. He was rather handsome, but looked sullen and discontented; and he kept rubbing his eyes and shading them with his hand, as if the light of the sun pained them.

"Do not be afraid," said he, with as cheerful a smile as he knew how to put on. "Come! Will not you like to ride a little way with me, in my beautiful chariot?"

But Proserpina was so alarmed, that she cried, "Mother, Mother Ceres! Come quickly and save me."

"Why should you be so frightened, my pretty child?" said he, trying to soften his rough voice. "I promise not to do you any harm. What! you have been gathering flowers? Wait till we come to my palace and I will give you a garden full of prettier flowers than those, all made of pearls, and diamonds and rubies. Can you guess who I am? they call my name Pluto and I am king of diamonds and all other precious stones."

"Let me go home!" screamed Proserpina, "let me go home!"

"My home is better than your mother's," answered King Pluto. It is a palace all

made of gold, with crystal windows; and because there is little or no sunshine, the palace is illuminated with diamond lamps."

"I don't care for golden palaces and thrones," sobbed Proserpina, "Oh, my mother, my mother! carry me back to my mother!"

But King Pluto, as he called himself, only shouted to his steeds to go faster. "Pray do not be foolish, Proserpina," said he, in rather a sullen tone. "I offer you my palace and my crown, and all the riches that are under the earth; and you treat me as if I was doing you an injury."

"Never!" answered Proserpina, "I shall never smile again till you set me down at my mother's door."

But she might just as well have talked to the wind that whistled past them; for Pluto urged on his horses, and went faster and faster than ever.

At last, they came to the palace of King Pluto, which was illuminated by means of large precious stones, that seemed to burn like so many lamps.

Pluto summoned his servants and bade them spread a feast; and above all things, not to fail to bring a golden beaker of the water of Lethe for Proserpina.

"Only drink a little of it, and you will cease to grieve for your mother and be perfectly happy in my palace," said King Pluto.

"I will neither drink that nor anything else," said Proserpina. "Nor will I taste a morsel of food, even if you keep me forever here."

"I should be sorry for that," replied

Pluto, patting her cheek; for he really wished to be kind, if he had only known how. "You are a spoiled child, I perceive, my little Proserpina; but when you see the nice things which my cook will make for you, your appetite will quickly come back again."

Then, sending for the head cook, he gave orders that all sorts of nice things should be set before Proserpina. He had a secret motive in this; for, you are to understand, it is a fixed law, that when persons are carried off to the land of magic, if they only taste any food there, they can never get back to their friends.

But my story must now clamber out of King Pluto's dominions, and see what Mother Ceres has been about since she was bereft of her daughter.

You remember Proserpina gave a loud scream just as she was being borne away in the chariot, out of sight and hearing.

This shriek was heard by Mother Ceres, but she had mistaken the rumbling of the chariot wheels for a peal of thunder, and imagined that a shower was coming up, that would assist in making the corn grow. But at the sound of Proserpina's shriek, she started and looked about in every direction, not knowing whence it came, but feeling almost certain that it was her daughter's voice.

So she quickly left the field in which she had been so busy; and, as her work was not half done, the grain looked, next day, as if it needed both sun and rain, and as if it were blighted in the ear, and had something the matter with its roots.

"Where is Proserpina?" cried Ceres.

"Where is my child? Tell, me, you naughty sea-nymphs, have you enticed her under the sea?"

"Oh no, good Mother Ceres," said the innocent nymphs, "We never should dream of such a thing. Proserpina has been at play with us, but it was a long time ago. She went up on to the dry land to gather some flowers for a wreath."

Ceres waited to hear no more but hurried off to make inquiries all through the neighborhood. But nobody told her anything that could enable the poor woman to guess what had become of Proserpina.

Poor Mother Ceres! So much did she suffer that her face, once so young-looking, grew to look like an elderly person in a very short time.

She cared not how she dressed, nor had she thought of flinging away the wreath of withered poppies, which she put on the very morning of her daughter's disappearance.

She roamed about in such a wild manner that people took her for some distracted person, never dreaming that she could be Mother Ceres, who had the oversight of every seed which the husbandman planted. Now-a-days, however, she gave herself no trouble about seed-time nor harvest, but left the farmers to take care of their own affairs, and the crops to fade or flourish, as the case might be.

But what has been happening all this time in Pluto's kingdom?

"My own little Proserpina," he used to say, "I wish you could like me a little better. We gloomy and cloudy-natured persons have often as warm hearts at

bottom, as those of a more cheerful character."

"Ah!" said Proserpina, "you should have tried to make me like you before carrying me off. Now you had better let me go again. Then I might remember you sometimes, and think that you were as kind as you knew how to be. Perhaps, some day I might come back, and pay you a visit."

"No, no," answered Pluto, with his gloomy smile, "I will not trust you for that. You are too fond of living in the broad daylight, and gathering flowers. Are not these gems that I have ordered for you prettier than a violet?"

"Not half so pretty," said Proserpina, snatching the gems from Pluto's hand, and flinging them to the other end of the hall. "Oh, my sweet violets, shall I never see you again?"

Now it happened that just here one of Pluto's servants came in bringing to Proserpina a little pomegranate from her own world above.

As soon as Proserpina saw the pomegranate, she told the servant he had better take it away. "I shall not touch it, I assure you," said she. "If I were ever so hungry, I should never think of eating such a dry, miserable pomegranate as that."

"It is the only one in the world," said the servant.

He set down the golden salver with the dry pomegranate upon it, and left the room.

"At least, I may smell it," thought Proserpina.

So she took up the pomegranate and applied it to her nose; and so great was the temptation that before she knew what she was about the fruit found its way into her mouth. Just as she had bitten into it the door of the room opened and in came King Pluto followed by Quicksilver, who had been urging him to let his prisoner go.

"My little Proserpina," said the king, sitting down and drawing her to him, "here is Quicksilver who tells me a great many misfortunes have happened to innocent people on account of my keeping you in my kingdom. And an iron heart I should have, indeed, if I could detain you here any longer, my poor child, when it is now six months since you have tasted food. I give you your liberty. Go with Quicksilver. Hasten home to your dear mother."

During all this time, Mother Ceres had been sitting disconsolately at home, with her torch burning in her hand. She had been idly watching the flame, when, all at once, it flickered and went out. "What does this mean?" thought she. "It was an enchanted torch, and should have kept burning till my child came back."

Lifting her eyes, she was surprised to see a sudden verdure flashing over the brown and barren fields, just as you may have seen a golden hue gleaming across the landscape, from the just risen sun.

"Does the earth disobey me?" exclaimed Mother Ceres, indignantly. "Does it presume to be green, when I have bidden it be barren, until my daughter shall be returned to my arms?"

"Then open your arms, dear mother," cried a well-known voice, "and take your little daughter into them."

Their mutual joy and happiness is not to be described. When their hearts had grown a little more quiet, Mother Ceres looked anxiously at Proserpina.

"My child," said she, "did you taste any food while you were in King Pluto's palace?"

"Dearest mother," answered the child, "I will tell you the whole truth. Until this very morning, not a morsel of food had passed my lips. But today, they brought me a pomegranate (a dry miserable one) and having seen no fruit for so long, and I was so faint with hunger, I was tempted just to bite it. The instant I tasted it Quicksilver and King Pluto came into the room. I had not swallowed a morsel; but—dear mother, I hope it was no harm—but six of the pomegranate seeds, I am afraid, remained in my mouth."

"Ah, unfortunate child, and miserable me!" exclaimed Ceres. "For each of those six seeds you must spend one month of every year in King Pluto's palace. You are but half restored to your mother. Only six months with me, and six with that good-for-nothing King of Darkness!"

"Do not speak so harshly of poor King Pluto," said Proserpina, kissing her mother. "He has some very good qualities. He certainly did wrong to carry me off, but then, as he says, it is but a dismal sort of life for him, to live all alone in that great gloomy place; and it has made a wonderful change in his actions to have a little girl running up and down stairs in his home. There is some comfort in making him happy, and so let us be thankful that he did not keep me the whole year round."—From *The Pomegranate Seeds*. By NATHANIEL HAWTHORNE.

LILY'S BALL.

Lily gave a party,
And her little playmates all,
Gaily dressed, came in their best,
To dance at Lily's ball.

Little Quaker Primrose
Sat and never stirred;
And, except in whispers,
Never spoke a word.

Tulip fine and Dahlia
Shone in silk and satin;
And learned Old Convolvulus
Was tiresome with his Latin.

Snow-drop nearly fainted
Because the room was hot,
And went away before the rest
With sweet Forget-me-not.

Pansy danced with Daffodil,
Rose with Violet;
Silly Daisy fell in love
With pretty Mignonette.

And when they danced the country-dance,
One could scarcely tell

Which of these two danced it best,
Cowslip, or Heather-bell.

Between the dances, when they all
Were seated in their places,
I thought I never saw before
So many pretty faces.

But of all the pretty maidens
I saw at Lily's ball,
Darling Lily was to me
The sweetest of them all.

And when the dance was over,
They went down stairs to sup,
And each had a taste of honey-cake,
With dew in a Butter-cup.

And all were dressed to go away
Before the set of sun;
And Lily said "Good-by," and gave
A kiss to every one.

And before the moon or a single star
Was shining overhead,
Lily and her little friends
Were fast asleep in bed.

REFERENCE TABLE.

FOR YOUNG PEOPLE.

ENDOGENS

Have their flowers within a Spadix-like, a Petal-like, or a Husk-like covering.

I. SPADIX-LIKE.

If the covering is Spadix-like, the plant belongs to one of the following families:

<i>Palm,</i>	<i>Cat-tail,</i>
<i>Arum,</i>	<i>Pickereel-weed.</i>

II. PETAL-LIKE.

If the covering is Petal-like, the plant belongs to one of the following families:

<i>Water Plantain,</i>	<i>Colchicum,</i>
<i>Trillium,</i>	<i>Lily,</i>
<i>Spiderwort,</i>	<i>Amaryllis,</i>
<i>Pickereel-weed,</i>	<i>Iris,</i>
<i>Indian Cucumber-root,</i>	<i>Orchis.</i>
<i>Greenbrier,</i>	

III. HUSK-LIKE.

If the covering is Husk-like, the plant belongs to the *Rush*, the *Sedge*, or the *Grass* Family.

EXOGENS.

Exogens are Apetalous, Monopetalous or Polypetalous.

I. APETALOUS

are with (1) Flowers in Catkins or (2) Flowers not in Catkins.

1. Apetalous Exogens.—Flowers in Catkins include the following families:

<i>Hop-in-the-Hemp,</i>	<i>Willow,</i>
<i>Walnut,</i>	<i>Birch,</i>
<i>Nettle,</i>	<i>Sweet-gale.</i>
<i>Plane-tree,</i>	

2. Apetalous Exogens.—Flowers not in Catkins include the following families:

With many seeds in each cell,	
<i>Birthwort,</i>	<i>Pink,</i>
<i>Stonecrop,</i>	<i>Crowfoot.</i>

With only one or two seeds in each cell,

<i>Mirabilis,</i>	<i>Rose,</i>
<i>Laurel,</i>	<i>Pokeweed.</i>
<i>Nettle,</i>	<i>Buckwheat,</i>
<i>Buckthorn,</i>	<i>Hemp,</i>
<i>Elm,</i>	<i>Goosefoot,</i>
<i>Olive,</i>	<i>Amaranth,</i>
<i>Mezerum,</i>	<i>Maple.</i>
<i>Crowfoot,</i>	

II. MONOPETALOUS

have either (1) Corolla on the Ovary or (2) Corolla below the Ovary on the receptacle.

1. Monopetalous Exogens with the corolla on the Ovary include the following families:

<i>Honeysuckle,</i>	<i>Compositæ,</i>
<i>Mirabilis,</i>	<i>Lobelia,</i>
<i>Madder,</i>	<i>Gourd,</i>
<i>Campanula,</i>	<i>Teasel,</i>
<i>Huckleberry,</i>	<i>Valerian.</i>

2. Monopetalous Exogens with the Corolla below the Ovary have either (a) more stamens than there are petals, (b) just the same number, (c) or less.

a. If there are more the following families are included:

<i>Pulse,</i>	<i>Camellia,</i>
<i>Fumitory,</i>	<i>Ebony,</i>
<i>Mallow,</i>	<i>Heath.</i>

b. If they are the same, the following families are included:

<i>Leadwort,</i>	<i>Water-leaf,</i>
<i>Primrose,</i>	<i>Gentian,</i>
<i>Heath.</i>	<i>Plantain,</i>
<i>Milkweed,</i>	<i>Figwort,</i>
<i>Dogbane,</i>	<i>Nightshade,</i>
<i>Holly,</i>	<i>Convolvulus,</i>
<i>Sage or Mint,</i>	<i>Polymonium.</i>
<i>Burrage,</i>	

c. If the stamens are fewer:

<i>Sage or Mint,</i>	<i>Figwort,</i>
<i>Vervain,</i>	<i>Olive,</i>
<i>Broom-Rape,</i>	<i>Jessamine.</i>
<i>Begonia,</i>	

III. POLYPETALOUS

have either (1) Stamens more than ten, (2) or ten or less.

1. If the stamens are more than ten, they are (a) either borne on the receptacle free from the corolla: (b) on the receptacles connected with the corolla; (c) or borne on the calyx.

a. If the stamens are borne on the receptacle free the following families are included:

<i>Barberry,</i>	<i>Crowfoot,</i>
<i>Purslane,</i>	<i>Watershield,</i>
<i>Poppy,</i>	<i>Moonseed,</i>

<i>Linden,</i>	<i>Custard-apple,</i>
<i>Orange,</i>	<i>Magnolia,</i>
<i>St. Johnswort,</i>	<i>Nelumbo,</i>
<i>Cistus,</i>	<i>Mignonette,</i>
<i>Side-saddle,</i>	<i>Water-Lily.</i>

b. If borne on the receptacles and connected with the corolla, the following families are included:

<i>Mallow,</i>	<i>Camellia.</i>
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c. If the stamens are borne on the Calyx, the following families are included.

<i>Carolina Allspice,</i>	<i>Lythrum,</i>
<i>Cactus,</i>	<i>Saxifrage,</i>
<i>Water-Lily,</i>	<i>Purslane,</i>
<i>Rose,</i>	

2. If the stamens are less or just ten, (a) the corolla will be regular; (b) or the corolla will be irregular.

b. If irregular, the following families are included:

<i>Horse-chestnut,</i>	<i>Balsam,</i>
<i>Pulse,</i>	<i>Indian Cress,</i>
<i>Violet,</i>	<i>Fumitory,</i>

a. If regular, the following families are included:

<i>Moonseed,</i>	<i>Stone-crop,</i>
<i>Leadwort,</i>	<i>Pulse,</i>
<i>Barberry,</i>	<i>Heath,</i>
<i>Grapevine,</i>	<i>Lythrum,</i>
<i>Buckthorn,</i>	<i>Cress,</i>
<i>Purslane,</i>	<i>Fringe-tree,</i>
<i>Primrose,</i>	<i>Staff-tree,</i>
<i>Gourd,</i>	<i>Sumach,</i>
<i>Currant,</i>	<i>Pinweed,</i>
<i>Saxifrage,</i>	<i>Pink,</i>
<i>Evening-Primrose,</i>	<i>Passion Flower.</i>
<i>Cornel,</i>	<i>Holly,</i>
<i>Parsley,</i>	<i>Bladdernut,</i>
<i>Aralia,</i>	<i>Maple,</i>
<i>St. Johnswort,</i>	<i>Flax,</i>
<i>Rue,</i>	<i>Wood Sorrel,</i>
<i>Rose,</i>	<i>Geranium.</i>

REFERENCE TABLE.

FOR ADVANCED PUPILS.

ENDOGENS.

SPADIX DIVISION.—Sessile flowers crowded in a fleshy spike or spadix, or a head on a thickened axis. With or without a bract for covering, called a spathe.

- | | | | |
|---|---|---|--------------------------|
| Trees or shrubs with simple stems and flowers with calyx and corolla, | . | . | <i>Palm F.</i> |
| Herbs; small, crowded flowers either naked or with small blossom-leaves. | | | |
| A large spathe envelopes the spadix; naked flowers; fruit, a berry, | . | . | <i>Arum F.</i> |
| No spathe covering the spadix; six blossom-leaves, | . | . | <i>Arum F.</i> |
| Spadix naked, not surrounded by a spathe; no perianth; fruit, an akene, | | | <i>Cat-tail F.</i> |
| Blue, six-lobed, tube-like flowers cover the spadix which grows above the small spathe. Belongs to the next division. | . | . | <i>Pickereel-weed F.</i> |

PETALOID DIVISION.—Flowers having either calyx and corolla or a perianth (blossom leaves) colored like a corolla and of six lobes or leaves. Flowers not on a fleshy spike, and not enclosed by a bract or spathe.

Blossom-leaves growing free underneath the ovary; consisting

Of three greenish sepals and three colored separate petals.

- | | | | |
|--|---|---|--------------------------|
| Many pistils in a head or a ring forming akenes, | . | . | <i>Water-Plantain F.</i> |
| Whorled-veiny leaves; three sessile stigmas or three styles; one pistil, | . | . | <i>Trillium F.</i> |
| Parallel-veined alternate leaves; one slender style and pistil, | . | . | <i>Spiderwort F.</i> |

Of six leaves resembling petals and growing three inside and three outside or else six lobes (sometimes only four) of the same color.

Three or six stamens growing three long and three short,	.	.	<i>Pickereel-weed F.</i>
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Six stamens or the same number as the divisions of the perianth and all of equal height,

Anthers growing on the outer side of filaments.

Perfect flowers with three long stigmas. Whorled leaves,	.	<i>Indian Cucumber-root F.</i>
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Alternate leaves with tendrils on each side and netted-veined. Sterile flowers. Three styles or sessile stigmas,	.	.	<i>Greenbrier F.</i>
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Alternate leaves without tendrils. Perfect or incomplete flowers. Three styles or three-cleft style,	.	.	<i>Colchicum F.</i>
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Anthers on the inner side of the filaments, one style; one or three stigmas,	.	<i>Lily F.</i>
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Adherent perianth or looking as if it grew on the ovary.

Six stamens with anthers on inner side of filaments. Regular flowers or nearly so,	<i>Amaryllis F.</i>
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Three stamens with outward turned anthers. Generally irregular flowers,	<i>Iris F.</i>
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One or two stamens united with the style. Irregular odd-shaped flowers,	<i>Orchis F.</i>
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HUSK-LIKE DIVISION. — Flowers neither on a spadix nor with corolla-like blossom-leaves, but with thin scales like the chaff or husk of Grain and Grasses, rush-like or straw-like stems.

Six thin whorled scales or glumes to a flower, resembling a calyx,	.	<i>Rush F.</i>
Flowers in its axil with but one glume. Flowers in heads or spikes,	.	<i>Sedge F.</i>
Two or four glumes or thin scales to a flower, and in two sets,	.	<i>Grass F.</i>

EXOGENS.

I.—POLYPETALOUS DIVISION.

A.—Stamens more than ten.

1. — Stamens separate from the calyx, corolla or ovary, and on the receptacle.

More than one pistil, each separate.

Herbs, flowers perfect.

Leaves either toothed or compound; not shield-shaped,	.	<i>Crowfoot F.</i>
Leaves shield-shaped, attached by centre,	.	<i>Watershield F.</i>

Woody vines, bearing staminate or pistilate flowers.

Leaves shield-shaped, attached near the edge,	.	<i>Moonseed F.</i>
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Small trees, bearing perfect flowers with six petals.

Leaves entire,	.	<i>Custard-Apple F.</i>
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Many pistils grown together on a long receptacle, different heights, . | *Magnolia F.* |

More than one pistil on a broad receptacle and sunk in the flat top, . | *Nelumbo F.* |

Three to six pistils with the ovaries growing in a circle which forms

A bladder pod of more than one cell,	.	<i>Fennel-flower in Crowfoot F.</i>
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A pod with one cell but several horns,	.	<i>Mignonette F.</i>
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Only one pistil generally, and

One simple one-celled ovary.

Large petals, six or nine. One or two leaves, many lobed,	.	<i>May-Apple in Barberry F.</i>
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Petals very small, or four irregular ones,	.	<i>Crowfoot F.</i>
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Compound ovary with the placenta at the bottom of the cell, bearing

many seeds,	.	<i>Purslane F.</i>
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Ovary compound; more than one placenta if a one-celled ovary.

Calyx drops off in blossoming, petals more than sepals,	.	<i>Poppy F.</i>
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Calyx falling after flower opens; several-celled ovary; but one style,

The fruit one-seeded and dry, sepals five, edge to edge in bud,	.	<i>Linden F.</i>
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The fruit many-celled. Sepals overlay in bud,	.	<i>Orange F.</i>
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Calyx remaining after the fruit forms.

The opposite leaves are spotted or else transparent,	.	<i>St. John's-wort F.</i>
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The leaves without spots. A one-celled ovary and pod,	.	<i>Cistus F.</i>
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The leaves not spotted; one-celled ovary. An aquatic or bog-plant.

Pitcher-shaped leaves and style like an umbrella,	.	<i>Side-saddle Flower F.</i>
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Round, heart-shaped leaves. No style,	.	<i>Water-Lily F.</i>
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2. — *Petals on the receptacle and stamens joined to their base.*

- One-celled, kidney-shaped anthers; filaments unite and form a column
 or long tube, *Mallow F.*
 Two-celled oblong anthers; filaments and base of petals united, *Camellia F.*

3. — *Stamens joined with calyx where it separates (when coherent) from the ovary.*

Several rows of petals.

- Shrubs bearing dull-purple flowers and simple opposite leaves, *Carolina-Allspice F.*
 Odd-shaped, fleshy plants, without leaves, *Cactus F.*
 Large leaves and flowers floating on the surface of the water, *Water-Lily F.*

Four, five and sometimes six petals.

- Alternate leaves with stipules, *Rose F.*
 No stipules to leaves. Many seeds in pods.

- One stigma and style. Free calyx around the pod, *Lythrum F.*
 Three to eight styles or stigmas. Calyx not free, but joined with ovary below.

- Shrubs with opposite leaves. Several cells in pod, *Philadelphus in Saxifrage F.*
 Herbs with fleshy leaves, one-celled pod opening by a lid, *Purslane F.*

B. — Ten or less stamens.

1. — *Irregular Corolla. (One pistil.)*

Compound, palmate leaves growing opposite. Five toothed calyx.

Trees or shrubs.

- Alternate leaves with stipules, *Horse-chestnut F.*

- United filaments, but separate anthers. The two lower petals joined or
 nearly so. Simple pod with one row of seeds, *Pulse F.*

- Short filaments with five united anthers. Base of lower petal a spur or sac.
 Pod with the seed-bearing lines on the walls, *Violet F.*

Alternate leaves without stipules. The flowers are one or two spurred.

- Five short stamens with slightly joined anthers. Pod bursts when touched, *Balsam F.*

- Eight separate stamens. Fruit three-lobed, separating into three thick
 one-seeded pieces, *Indian-Cress F.*

- Six stamens arranged in two sets. One-celled pod. Closed flowers, *Fumitory F.*

2. — *Regular Corolla or nearly so.*

Stamens and petals six, standing opposite each other.

- Generally two or four separate pistils. Small diœcious flowers, *Moonseed F.*
 Five-styled pistil, but only one ovary, *Leadwort F.*

One pistil with one style, but sometimes more than one stigma.

- Valved anthers (opening by little doors). Six or eight petals, *Barberry F.*

Anthers not valved, but opening lengthwise.

- Vines are woody. Sepals very small and the petals drop off very
 early, *Grape-Vine F.*

- Shrubs with large calyx of four or five divisions, *Buckthorn F.*

Herb. One-celled ovary and pod.

- Two-divisioned calyx, five petals, three stigmas, *Purslane F.*

- One style and one stigma. Sepals and petals of the same
 number, *Primrose F.*

Stamens the same number and growing alternate with the petals, or else twice as many or of unequal number.

Tube of calyx joined to top of ovary.

Three stamens somewhat joined. The flowers have either all pistils or all stamens on the same plant, *Gourd F.*

Distinct stamens, twice or the same number as petals.

One-celled berry, containing many seeds. Shrubs, *Currant F.*

Pod one or two-celled with many seeds, two styles, *Saxifrage F.*

Pod four-celled with many seeds. One style cleft in four parts at summit, *Evening-Primrose F.*

Pod one to five-celled with one seed in a cell. Obscure calyx border.

The flowers grow in heads or cymes, one style on stigma, *Cornel F.*

Flowers form an umbel.

Compound umbels. Flowers having two styles; dry fruit, *Parsley F.*

Panicles, or simple umbels. Three to five styles, occasionally but two;

fruit forms a berry, *Aralia F.*

Inferior calyx, or at least when ovary forms fruit.

Aromatic, sharp-tasting leaves with transparent spots.

Simple, entire and opposite leaves, *St. John's-Wort F.*

Compound leaves, *Rue F.*

Leaves without dots.

Several pistils. Stipules, *Rose F.*

Four or five pistils. Leaves without stipules. Herbs, *Stone-crop F.*

Two slightly coherent pistils. No stipules to leaves, *Saxifrage F.*

Simple, one-celled pistils, *Pulse F.*

One compound pistil, more than one stigma, style or cell.

One style with top slightly cleft or else entire; (in *Cress F.* no style or very short.)

Little chinks at the top of the anthers, or anthers opening by one chink across the top, *Heath F.*

Longitudinal anthers; opening lengthwise.

Stamens growing on the calyx. Herbs, *Lythrum F.*

Two long and four short stamens on receptacle. Herbs, *Cress F.*

Plants woody. Few-seeded fruit.

Four long petals and less stamens, *Fringe-tree F.*

Petals broad, stamens same number, *Staff-tree F.*

Two to five-cleft style or from two to six sessile stigmas.

Fruit and ovary one-celled and

one-seeded. Shrubs, *Sumach F.*

Three seed-bearing places, two seeds on

each, *Pin-weed F.*

Many seeded. Separate stamens.

Pod with seeds growing in the centre.

Opposite leaves, *Pink F.*

Seeds growing on the sides or bottom

of pod, *Saxifrage F.*

Berry long-stalked with seeds along the walls.

Stamens united by their filaments into one set, *Passion-flower F.*

Two to five or more cells in ovary.

Stamens and stigmas sessile; four to six,	<i>Holly F.</i>
Compound opposite leaves, three styles, .	<i>Bladder-nut F.</i>
Two styles or long stigmas. Fruit has two little wings,	<i>Maple F.</i>
Five styles or one divided into five.	
Five stamens; pod generally with ten cells,	<i>Flax F.</i>
Ten stamens; five-celled pod. Com- pound leaves,	<i>Wood-Sorrel F.</i>
Ten stamens (some without anthers); five styles grow to a long head, but when ripe they split away carry- ing the five little one-seeded pods with them,	<i>Geranium F.</i>

II.—MONOPETALOUS DIVISION.

The petals of the corolla more or less united into one piece.

A.—Calyx tube coherent, or corolla growing on the ovary.

Anthers of the stamens united.

Filaments separate. Flowers grow in heads with an involucre of little leaves resembling the calyx,	<i>Composite F.</i>
Filaments are somewhat joined. Flowers scattered.	
Corolla split down one side. Flowers are perfect,	<i>Lobelia F.</i>
Regular corolla; juicy, tender vines with tendrils. Flowers not perfect,	<i>Gourd F.</i>

Stamens distinct and

Growing on corolla. Whorled leaves or growing opposite.

Opposite leaves without stipules. Flowers in heads with an involucre, .	<i>Teazel F.</i>
Opposite leaves with no stipules. Scattered flowers or if in heads without an involucre.	
Five-lobed corolla. Stamens two or three, less than lobes,	<i>Valerian F.</i>
Stamens one fewer or the same number as corolla-lobes,	<i>Honeysuckle F.</i>
Here may be found,	<i>Mirabilis F.</i>
Whorled leaves with no stipules, }	
Stipulate opposite leaves, }	<i>Madder F.</i>

Not on but growing with the regular corolla.

Corolla lobes and stamens the same number.

Herbs,	} <i>Campanula F.</i> (<i>Bell-Flower F.</i>)
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Twice the number of stamens as lobes of corolla.

Plants woody,	<i>Huckleberry F.</i>
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B.—Calyx free or corolla below the ovary.**1.—Always more stamens than petals.**

- Compound leaves. One-celled pod. Irregular flowers generally.
- | | |
|---|--------------------|
| Generally ten stamens, but more if the flower is regular, | <i>Pulse F.</i> |
| Four united petals. Six stamens arranged in two sets, | <i>Fumitory F.</i> |
- Palmately-divided or simple leaves. Stamens are united by their filaments into a tube, *Mallow F.*
- Simple, undivided leaves. Stamens distinct or joined at base,
- | | |
|---|--------------------|
| Many stamens united with the base of the petals, | <i>Camellia F.</i> |
| Four times or twice as many stamens as petals and borne on the corolla, | <i>Ebony F.</i> |
| Twice as many stamens as petals and not on corolla, | <i>Heath F.</i> |

2.—Stamens and regular corolla lobes same number, sometimes six or seven, but generally four or five.

- Stamens *opposite* the petals or the divisions of the corolla.
- | | |
|--|--------------------|
| Calyx tunnel-shaped; five petals slightly joined; five styles, | <i>Leadwort F.</i> |
| One style (petals generally united), | <i>Primrose F.</i> |
- Stamens not opposite the divisions or lobes of corolla. Five; seldom four;
- And not borne on petals, but on receptacle *Heath F.*
- Anthers somewhat united with the stigma, and adhering to petals. A milky juice. Each flower has two ovaries and pods.
- | | |
|---|--------------------|
| Filaments form a tube: stigma attached to anthers, | <i>Milkweed F.</i> |
| Filaments and anthers free, merely around the stigma, | <i>Dogbane F.</i> |
- Adhere to petals, and free from the stigma.
- | | |
|--|-----------------|
| Four to six sessile stigmas. Deeply-cleft but short corolla, no style, | <i>Holly F.</i> |
|--|-----------------|
- Four-lobed ovary making four akenes when ripe; aromatic leaves, growing opposite; four stamens. One, sometimes two styles, sometimes 2 or 3 cleft, *Sage or Mint F.*
- | | |
|--|-------------------|
| Alternate leaves, not spicy. Five stamens, | <i>Borrage F.</i> |
|--|-------------------|
- Seeds on the walls of one-celled ovary and pod,
- | | |
|--|---------------------|
| Lobed or cut leaves. Two-cleft style at top, | <i>Waterleaf F.</i> |
| Entire opposite leaves or if alternate with three simple leaflets, | <i>Gentian F.</i> |
- Ovary and fruit two-celled, sometimes more.
- | | |
|--|--------------------|
| Four long stamens; flowers grow in crowded spikes, | <i>Plantain F.</i> |
|--|--------------------|
- Five stamens; a many-seeded pod or berry.
- | | |
|---|----------------------|
| Flowers somewhat irregular. One simple style, | <i>Figwort F.</i> |
| Flowers generally regular; stamens equal, | <i>Nightshade F.</i> |
- Five stamens; a few-seeded pod.
- | | |
|--|-----------------------|
| Twining herbs. Large seeds, | <i>Convolvulus F.</i> |
| Spreading or upright herbs. Style cleft at top in three, | <i>Polemonium F.</i> |

3.—Stamens fewer than sepals or petals; generally two or four.

Irregular, generally two-lipped corolla.

Four-lobed ovary, in fruit making four akenes.

- | | |
|---|------------------------|
| Square stems with spicy leaves, growing opposite, | <i>Sage or Mint F.</i> |
| Four-celled, four-seeded ovary and fruit. Four stamens, | <i>Vervain F.</i> |
| One-celled ovary, forming one akene. Four stamens, | <i>Vervain F.</i> |

Ovary forms a one-celled pod with several seeds on the walls. No green leaves,	<i>Broom-Rape F.</i>
Ovary forms a two-celled pod. Seeds large and winged,	<i>Bigonia F.</i>
Ovary and fruit containing four or five irregular cells and many large seeds,	<i>Bigonia F.</i>
Ovary a two-celled pod, with few or many small seeds,	<i>Figwort F.</i>
Regular corolla. Plant woody. Two stamens.	
Four-parted or four-lobed corolla,	<i>Olive F.</i>
Salver-shaped five lobed corolla,	<i>Jessamine F.</i>

III.—APETALOUS DIVISION.

No corolla and sometimes no calyx.

A.—Flowers not in Catkins or Catkin-like heads.

1.—Many seeds in one cell of ovary and fruit.

Ovary six-celled with the tube of calyx coherent,	<i>Birchwort F.</i>
Ovary five-celled with calyx free.	
Five-celled pod also with five little horns,	<i>Ditchwort in Stonecrop F.</i>
Three-celled pod, or three styles or more and one cell,	<i>Carpelweed, etc., in Pink F.</i>
Simple one-celled pod or berry,	<i>Crowfoot F.</i>

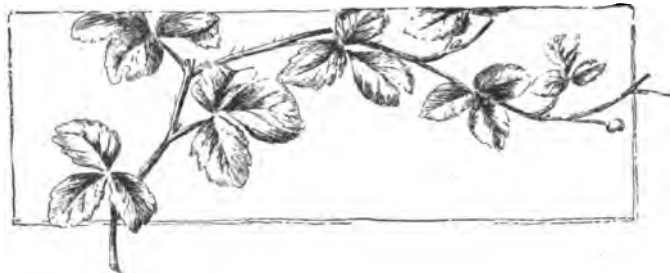
2.—One or two seeds in each cell of ovary or fruit.

Flowers with more than one distinct pistil.	
Calyx resembles the petals. Stamens borne on the receptacle,	<i>Crowfoot F.</i>
Calyx present and bearing the stamens. Stipulate leaves,	<i>Rose F.</i>
One simple pistil or two or more grown into one with united ovaries.	
Ten styles. Berry ten-seeded,	<i>Pokeweed F.</i>
Two or three pistils.	
Herbs with entire leaves and stipules like sheathes,	<i>Buckwheat F.</i>
Herbs with distinct stipules, and cleft or compound leaves,	<i>Hemp F.</i>
Herbs. Not stipulate and	
With no scaly bracts. Small greenish flowers,	<i>Goosefoot F.</i>
The flowers have scaly bracts around and among them,	<i>Amaranth F.</i>
Trees or shrubs. Leaves opposite. Fruit like a pair of keys,	<i>Maple F.</i>
Trees or shrubs with alternate leaves with stipules.	
Stamens borne on calyx throat and not opposite the lobes,	<i>Buckthorn F.</i>
Stamens at base of sepals,	<i>Elm F.</i>
Style, <i>one</i> , cleft at top. Leaves pinnate. Fruit, a key,	<i>Ash in Olive F.</i>
Style, <i>one</i> . Simple, or a sessile stigma.	
Calyx shaped like a cup or tube, and colored like a corolla.	
Stamens eight on the tube. Shrubs with simple leaves,	<i>Mezereum F.</i>

- Stamens four, borne on throat.
 Shrubs with compound leaves, *Burnet in Rose F.*
 Stamens five or less, not on calyx. Funnel-shaped calyx,
 resembling a monopetalous corolla; and a cup outside
 that, looking like a calyx.
 Herbs with opposite leaves, *Mirabilis F.*
 Six sepals, colored and shaped like petals; from nine to twelve stamens
 with valvate anthers, opening by little doors.
 Trees or shrubs, aromatic, *Laurel F.*
 Three to five greenish sepals in the sterile flower; three to five stamens.
 Flowers either with only stamens only all pistils, or
 with both stamens and pistils, *Nettle F.*

B.—Flowers of one or both kinds on Catkin or Catkin-like heads.

- Herbs twining, bearing diœcious flowers. Short catkin of fertile flowers, . *Hop-in-Hemp F.*
 Trees or shrubs.
 Staminate flowers in catkins.
 Pinnate leaves. Ovary and fruit (a sort of stone fruit), with no
 involucre, *Walnut F.*
 Simple leaves. Fruit a nut in a little involucre like a cup, *Oak F.*
 Sterile and fertile flowers in a close head or catkin.
 Palmately-lobed or veined leaves.
 In the fertile flowers the four-cleft calyx becomes berry-
 like, *Mulberry. etc., in Nettle F.*
 Round heads of flowers with no calyx, *Plane-tree F.*
 Pinnately-veined leaves.
 Sterile or fertile flowers with one scale to each. Many-seeded pod, *Willow F.*
 Both kinds of flowers, with one scale for two or more of the
 fertile flowers, *Birch F.*
 One fertile scale to each flower. One-seeded fruit, *Sweet-Gale F.*





FLORA.

I. ENDOGENS OR MONOCOTYLEDONS.

Stem has its fibres in threads; leaves parallel-veined; flowers usually in threes or sixes, never in fives; the plantlet has one cotyledon.

If your flower, you find to be an *Endogen* (or a monocotyledon), see below.

II. EXOGENS OR DICOTYLEDONS.—

Stem with pith in the centre; leaves netted-veined; flowers usually in fives or fours, rarely in threes; the plantlet has two cotyledons.

If your flower, you find to be an *Exogen* (or a dicotyledon), see next page.

ENDOGENS.

Having decided that your plant is an *Endogen*, or a *Monocotyledon*, next find if it is

1. **Spadix-like.** — With the flowers collected into a thick, close spadix.

2. **Petal-like.**— Flowers not in a spadix, but more like petals.

3. **Husk-like.**— Flowers not in a spadix, but enclosed in a husk. Stems like straw or rushes.

If Spadix-like, see next page.

If Petal-like, see next page.

If Husk-like, see page 66.

EXOGENS.

Having decided that your plant is an *Exogen*, we must next see if it belongs to the

1. **Apetalous.**—Having no petals at all, and sometimes no calyx. The blossoms of many trees are apetalous.
2. **Monopetalous.**—Corolla united into one piece, as in the Morning Glory.
3. **Polypetalous.**—Having more than one petal—as in the Violet, the Buttermilk, or the Trillium.

If your plant is *apetalous*, see next page.

If your plant is *monopetalous*, see page 70.

If your plant is *polypetalous*, see page 73.



ENDOGENS.

SPADIX-LIKE.

Having decided that your plant is spadix-like, next find the family to which it belongs.

1. **PALM FAMILY.**—Trees or shrubs with *simple stems*. Flowers have a calyx and a corolla.
2. **ARUM FAMILY.**—Herbs. Small and crowded flowers. A spathe around the spadix. Flowers generally naked. Fruit a berry. Or, the spadix has no spathe, and the flowers are covered with a covering of six parts. Acid juice. Leaves so netted-veined as to seem to be exogens.
3. **CAT-TAIL FAMILY.**—Herbs. Linear, sword-shaped leaves. Small and crowded flowers. Spadix without a spathe. No perianth. Fruit in akene. Marsh or water plants.
4. **PICKEREL-WEED FAMILY.**—Spadix raised above a small covering. Covered, lobed, with blue, tube-like flowers. Flowers are six-lobed. Herbs, small, crowded flowers.

PETAL-LIKE.

Having decided that the plant has petal-like flowers, next find the family to which it belongs.

1. **WATER PLANTAIN.**—Flowers on scapes. Perianth free from the ovary, inserted under the ovary. Three greenish sepals. Three distinct and white or colored petals. Six to many stamens.
Many pistils in a ring. Akenes. Leaves, lance-shaped, oblong, heart-shaped or arrow-shaped. Found in marshes or in water.
2. **TRILLIUM FAMILY.**—Perianth inserted under the ovary.
Regular and perfect flowers.
Three green sepals. Three colored petals. One pistil.
Three styles, or close-sitting stigmas. Leaves whorled and veiny.
Simple stems rising from short root-stalks.
Netted-veined.
3. **SPIDER-WORT FAMILY.**—Perianth below the ovary. Three green sepals, and three generally blue or purple petals. Pistil one. One slender style. Leaves alternate. Parallel-veined, and sheathing at the base. Small, three-celled or two-celled pod containing few seeds.
Flowers open but for day.
4. **PICKEREL WEED.**—Perianth free—below the ovary. Six petal-like leaves in two ranks, three outside and three inside; or six-lobed, (sometimes four-lobed) all colored alike. Stamens three or six,—three on one side of flower, much shorter than the rest.

6. **GREEN-BRIER FAMILY.**—Perianth below the ovary. Stamens six, or as many as there are parts to the perianth.
Leaves alternate, *with tendrils*. Three styles, or close-sitting stigmas. Usually six petal-like leaves in two rows as in the Indian Cucumber-root and Pickerel-Weed. Anthers turn out, leaves *alternate*. The flowers are dioecious, that is, some flowers have stamens without pistils, others pistils without stamens.
7. **COLCHICUM.**—Perianth free from the ovary. Stamens six, or as many as the divisions, all alike. Anthers turned outward.
Leaves alternate, *without tendrils*.
Flowers perfect. Styles three or three-cleft. Otherwise like the Greenbrier.
8. **LILY FAMILY.**—Parallel-veined leaves, sessile or sheathing. Perfect, regular flowers.
Perianth free, under the ovary. Stamens six, or as many as the parts of the perianth.
Anthers turned inward. Style one, with one or three stigmas.
9. **AMARYLLIS FAMILY.**—Herbs with generally naked stems and long, linear leaves. Perianth clings to the ovary. Stamens six. Anthers turned *inwards*. Flowers *regular* or nearly so. Pods, three-celled.
10. **IRIS FAMILY.**—Perianth clings to the ovary. Stamens three. Anthers *turned out*. Flowers often *irregular*.
Herbs. The perfect flowers regular or irregular. Three-celled ovary forming a many-seeded pod. One style with three flat or petal-like stigmas.
11. **OCHS FAMILY.**—Perianth clings to the ovary. Stamens one or two. Flowers irregular, of singular shapes.
The stamens are joined to the style of the pistil.

HUSK-LIKE.

Having decided that your plant belongs to the Husk-like class, find to what Family it belongs.

1. **RUSH FAMILY.**—Husks in a whorl to each flower like a calyx. Six parts in the husk covering.
2. **SEDGE FAMILY.**—One husk for each flower. Flower on the axil. Flowers into heads or spikes.
3. **GRASS FAMILY.**—Husks two, or four to each flower. Arranged in two sets.

EXOGENS.

APETALOUS.

Having decided that your plant is Apetalous, next learn if its

1. Flowers are in catkins; or if its
2. Flowers are not in catkins.

If in catkins, see page 64.

If not in catkins, see page 65.

IN CATKINS.

Having decided that the flowers are in catkins, next find the family to which the plant belongs.

1. **HOP-IN-NETTLE FAMILY.**—Twining herbs. Some parts of the blossom borne on some trees, the other parts on other trees. Fertile flowers only in short catkins. Leaves heart-shaped and lobed.
2. **WALNUT FAMILY.**—Trees or shrubs. Sterile flowers only in catkins. Flowers entire borne on the same tree. The fertile ones single or few together at the end of a shoot. Leaves have their leaflets arranged along the sides of a main stalk. A stone fruit without a cup.
3. **OAK FAMILY.**—Like the Walnut except that the leaves are simple, and straight-veined with decid-

uous stipules. The sterile flowers in slender catkins, and the nuts are in cups (acorns).

4. **NETTLE FAMILY.**—Both kinds of flowers in catkins or close heads, with a regular calyx free from the ovary, which forms a one-seeded fruit. Leaves *palmately* veined or lobed. Calyx four-cleft in the fertile flowers, becoming berry-like. (Mulberry, etc.) Trees or shrubs.
5. **PLANE TREE FAMILY.**—Same as Nettle Family, except that there is no calyx, and the flowers are in round heads. Sterile flowers with short stamens and club-shaped scales intermixed. Fertile ones with little scales and ovaries, which form club-shaped akenes.
6. **WILLOW FAMILY.**—Trees or shrubs. Both kinds of flowers in catkins or close heads. Leaves *pinnately* veined, alternate and simple. Wood soft and light, covered with bitter-tasting bark. Flowers, some parts on one scale, and other parts on the other scale. Many seeds in the pod.
7. **BIRCH FAMILY.**—Like the Willow Family, except that the flowers are entire, two or more of them under each scale. Four stamens and a small calyx in sterile flower. Fertile flower with two long stigmas and a two-celled ovary becoming a scale-like akene or small key.

8. **SWEET-GALE FAMILY.**—Catkins like the Birch, except there is only one entire flower under each scale, and the fruit is one-seeded. The leaves are fragrant. Fruit, a nut or dry drupe.

NOT IN CATKINS.

Having decided that the flower is *not* contained in a catkin, next find whether

1. The seeds are many in each cell of the ovary; or
 2. The seeds only one or two in each cell.
- If many in each cell, see below.
If only one or two in each cell, see below.

SEEDS, MANY IN EACH CELL.

Having now decided that the seeds are many in each cell, next find the family to which the plant belongs.

1. **BIETHWORT FAMILY.**—Calyx, three-lobed with its tube coherent to the six-celled ovary or seed-cradle. Herbs or twining vines with large perfect flowers. Heart-shaped or kidney-shaped leaves, entire, alternate, on a long footstalk, or from a rootstalk at the surface of the ground.
2. **STONECROP FAMILY.**—Calyx free from the ovary. Pod five-celled, five-horned. Flowers with five sepals, no petals, five pistils grown together below. Thin, lance-shaped leaves. (Ditchwort).
3. **PINK FAMILY.**—Small or low herbs. Calyx free from ovary. Pod three-celled, or one-celled with three or more styles. Sepals separate or nearly so, petals without claws, spreading (sometimes wanting.) Flowers regular, small, generally white. (Carpet weed).
4. **CROWFOOT FAMILY.**—Calyx free from ovary. Simple one-celled pod or berry. Herbs or sometimes woody plants. Parts of the flower all distinct and borne on the receptacle. Petals of odd shapes or sometimes wanting; stamens more than twelve.

ONE OR TWO SEEDS IN A CELL.

Having decided that there are only one or two seeds in a cell, next find the family to which the plant belongs.

1. **CROWFOOT FAMILY.**—Pistils more than one to the flower, and separate from each other. Calyx present and petal-like. Many stamens on the receptacle.

2. **ROSE FAMILY.**—Pistils more than one, and separate from each other. Calyx present and the stamens inserted on it. Leaves with stipules and alternate, regular flowers. Petals five (sometimes wanting). Stamens about ten.

3. **POKEWEED FAMILY.**—*One pistil*, either simple, or formed by two or more, their ovaries united.

Alternate, oblong leaves. Racemed flowers growing opposite the leaves.

Five white, petal-like sepals, rounded and concave. Ten stamens under ovary.
Ten styles. Short and separate. Fruit, a ten-seeded berry, dark crimson.

4. **BUCKWHEAT FAMILY.**—Pistil like that of the Pokeweed. Styles or stigmas two or three.

Flowers mostly perfect, calyx of four or six sepals separate or slightly joined. Three to nine stamens borne on the sepals. Fruit a one-seeded akene.

Herbs, with sheathes for stipules, and entire leaves.

5. **HEMP FAMILY.**—Pistil like that of the Pokeweed. Styles or stigmas two or three. Herbs *with separate stipules*, and compound or cleft leaves. Tough fibrous bark.

Flowers dioecious. Sterile flowers in compound racemes or panicles with five sepals and five stamens. Fertile flowers crowded, with only one sepal and two long stigmas.

6. **GOOSEFOOT FAMILY.**—Pistil like the Pokeweed. Styles or stigmas two to five, Herbs *without stipules* and *without scaly bracts*. Flowers small and greenish. One to five stamens on calyx, which encloses a one-celled and one-seeded ovary.

7. **AMARANTH FAMILY.**—Like the Goosefoot throughout, except that it *has scaly bracts* around the flowers. Bracts bright colored. Herbs. Fruit a pod one seeded and opens around the middle, the upper part falling off as a lid.

8. **MAPLE IN SOAP BERRY FAMILY.**—*Opposite* leaves and the fruit a pair of keys. One pistil. Two or three stigmas. Often no petals but the calyx petal-like.

9. **BUCKTHORN FAMILY.**—Shrubs or trees. *Alternate* leaves and stipules falling off when ripe.

Stamens on the throat of the calyx, or on fleshy cup which lines the throat and alternating with its sepals. One pistil. Two or three styles or stigmas. Fruit of two to five cells, 1 large seed in each cell.

10. **ELM IN NETTLE FAMILY.**—Alternate simple leaves, falling stipules. Stamens on bottom of the calyx. Alternate leaves. Styles or stigmas two or three. Pistil one. Fruit, a thin key winged all round. Flowers come before the leaves.

11. **OLIVE FAMILY.**—Pistil one; style one; stigma two-lobed. Fruit, a key, winged at top or all round. Leaves pinnate. (Ash).
12. **MEZEREUM FAMILY.**—Pistil one; style one; or a close-sitting stigma. Calyx tubular or cup-shaped, colored like a corolla. Eight or ten stamens on a tube. Simple leaves. Bark tough and acrid. Perfect flowers. A shrub. Fruit, a berry.
13. **ROSE FAMILY.**—Pistil one; style one, or a close sitting stigma. Calyx tube or cup-shaped, colored like a corolla. Stamens four. On the throat. *Herbs.* Leaves compound. (Burnett.)
14. **MIRABILIS FAMILY.**—Pistil one; style one, or a close-sitting stigma. Calyx tube or cup-shaped.

Stamens five or less — on the receptacle. Calyx, funnel-shaped. A cup outside of the calyx which looks like a little calyx. *Herbs.* Opposite leaves. Heart-shaped, long-stalked.

15. **LAUREL FAMILY.**—Pistil one; one style, or a close-sitting stigma; calyx of six petal-like sepals which are colored like a corolla. Stamens nine or twelve. Anthers open by uplifted valves. Sweet-smelling shrubs or trees.
16. **NETTLE FAMILY.**—Pistil one; style one, or one close-sitting stigma. Calyx in the sterile flower is made up of from three to five greenish sepals. Stamens the same number. Whole flower sometimes on the same plant, sometimes not. *Herbs,* shrubs or trees with stipules. Ovary a one seeded fruit.

MONOPETALOUS.

Having decided that your plant is Monopetalous, next learn whether its

1. Corolla is on the ovary, with the tube of the calyx clinging close; or whether its

2. Corolla is on the receptacle below the ovary, with the calyx free.

If the corolla is on the ovary, see below.

If the corolla is below the ovary, see next page.

COROLLA ON THE OVARY.

Having decided that the corolla is on the ovary, next find the Family to which it belongs.

1. **COMPOSITE FAMILY.**—Stamens united by their anthers.
Flowers in heads, with a calyx-like cup.
2. **LOBELIA FAMILY.**—Stamens united by their anthers and also by their filaments more or less. Corolla irregular, split down one side. Flowers perfect and *not in heads.* *Herbs,* milky juice. Leaves alternate. Scattered flowers.
3. **GOURD FAMILY.**—Stamens united as in the Lobelia family. Corolla regular. Juicy-vined with tendrils. Flowers perfect, and *not in heads.* Calyx-tube of fertile flowers coherent to ovary. Petals often united into one and joined with or borne on calyx. Curiously shaped anthers.
4. **TEASEL FAMILY.**—Stamens separate, and inserted on the corolla. Leaves opposite.

No stipules. Head of flowers with a cup. *Herbs* bract under each blossom. Funnel-shaped corolla, four or five lobed, bearing four stamens. Fruit an akene with one hanging seed.

5. **VALERIAN FAMILY.**—Stamens separate and inserted on the corolla. Leaves opposite *without stipules.* Head, if any, *without involucre or cup.* Stamens *two or three less* than there are petals in the corolla. *Herbs* with strong-scented roots. Flowers small, or purplish.
6. **HONEYSUCKLE FAMILY.**—Stamens separate, and inserted on the corolla. Leaves opposite *without stipules.* Stamens of the same number as the petals of the corolla, or *one less.* See also the *Mirabilis* Family.
7. **MADDER FAMILY.**—Is like the Honeysuckle, except that the leaves are opposite *with* stipules, or whorled *without* stipules.
8. **CAMPANULA FAMILY.**—Stamens separate; inserted with but *not* on the corolla. Stamens as many as the petals of the regular corolla. Corolla five-lobed, cells of pod and stigmas three to five. *Herbs.*
9. **HUCKLEBERRY FAMILY.**—Stamens separate. Inserted with but *not* on the corolla. Stamens twice as many as the lobes of the corolla. Woody plants. One style and stigma. Anthers of two nearly separate cells, tapering upwards into a narrow tube, which opens at the top.

COROLLA BELOW THE OVARY.

Having decided that the corolla is *below* the ovary, next learn whether

- a. The stamens are more in number than the petals of the corolla: or whether
 - b. The stamens are of the same number as the petals of the corolla.
 - c. The stamens always less than the petals.
- If the stamens are more, see next page.
If the stamens are the same, see below.
If the stamens are less, see next page.

STAMENS SAME NUMBER AS PETALS.

Having decided that the stamens are the same in number as the petals, next find the family to which the plant belongs.

1. **LEADWORT FAMILY.**—Stamens five, one opposite each petal or each division of the corolla. Five styles. Cup-like calyx. Petals almost separate, and five in number. One-seeded ovary.
2. **PRIMROSE FAMILY.**—Stamens five, one opposite each petal or division of the corolla, and borne on the tube. One style. Petals sometimes almost distinct—not always. One-celled ovary or pod with one-seed bearing line rising from its base bearing many or few seeds.
3. **HEATH FAMILY.**—Stamens not in front of the petals and numbering usually five, or rarely four. Stamens inserted on the receptacle. Anthers open by a small hole at the top of each cell.
4. **MILKWEED FAMILY.**—Pods, a pair of many-seeded follicles: seeds with silky down at one end. Stamens not in front of the petals. Inserted on the corolla, and connected more or less with the stigma. Milky juice, tough bark. Two ovaries and two pods to each flower.
Anthers lightly adhering to the stigma, and the grains of pollen cohering into a waxy mass. Flowers in simple umbels. Filaments united in a tube.
5. **DOGBANE FAMILY.**—Stamens not in front of the petals. Inserted on the corolla. Anthers only surrounding the stigma. Filaments distinct. Stamens connected more or less with the stigma. Leaves opposite, entire. Two ovaries. Stigma and often the styles united into one. Corolla, five-lobed and one edge in, the other out (*convolute*) in bud.
6. **HOLLY FAMILY.**—Stamens four to six, not in front of corolla, but alternate with its divisions and attached to the very base of corolla. Anthers open lengthwise. Inserted on the corolla *free from the stigma*. No style. Stigmas four, five or six. Corolla very short, deeply cleft. Trees or shrubs with alternate leaves, and small, regular, (often polygamous) flowers.
Fruit, a berry-like drupe with from four to six seed-like stones.
7. **SAGE OR MINT FAMILY.**—Stamens in pairs, two long and two shorter (sometimes but two) and not in front of petals. Inserted on the two-lipped or irregular corolla, *free from the stigma*. One style, rarely two; sometimes a cleft style.
Ovary deeply lobed, forming four akenes as it ripens.
Four stamens. *Sweet-smelling* leaves. Leaves *opposite*.
The leaves are more or less dotted with small glands, containing an oil.
8. **BOREAGE FAMILY.**—Stamens not in front of petals of the corolla. Five petals. Five-leaved calyx. Ovary four-lobed, making four akenes. Flowers in one-sided, raceme-like clusters, coiled up at the tip, unfolding as the blossoms open. Inserted on the corolla free from the stigma. One style, rarely two; sometimes cleft. Stamens *five*. Leaves *alternate*, entire. *Not* sweet-smelling. Herbs commonly rough.
9. **WATER-LEAF FAMILY.**—Stamens not in front of corolla. Inserted on the corolla free from stigma. One style, rarely two; sometimes cleft. Ovary and pod one-celled. Seeds on the walls of the ovary. *Leaves* lobed or cut. Style cleft in two parts.
10. **GENTIAN FAMILY.**—Stamens, insertion, style, ovary, pods, seeds like the Waterleaf. Flowers regular, large and showy—stamens as many as the corolla lobes.
Leaves *entire* and *opposite*, or *alternate* with three little leaflets.
11. **PLANTAIN FAMILY.**—Stamens, insertion, style and stigma one, slender, same as the Waterleaf. Ovary and fruit with two or more cells. Four long stamens. Flowers in a close spike or spadix. Pods opening crosswise, and the top falling off as a lid, and the loose partition falling out with the seeds. Leaves generally with strong ribs.
12. **FIGWORT FAMILY.**—Stamens, insertion and style like the Waterleaf. Ovary and fruit with two or more cells. Stamens four, two long and two short or only two perfect ones—rarely five present. Pod or berry contains many seeds. Flowers not quite regular. Style entire.

13. **NIGHTSHADE FAMILY.**—Style one, rarely two; sometimes cleft. Ovary and fruit two or more cells. Stamens five. Pod or berry many-seeded. Flower regular. Stamens all alike. Stamens, insertion same as the Waterleaf. Herbs or sometimes shrubs with a colorless, bitter, often poisonous juice. Leaves alternate.

14. **CONVOLVULUS FAMILY.**—Style one, rarely two; sometimes cleft. Ovary and fruit with two or more cells.

Stamens five. Pod few seeded. Twining herbs. Seeds large. Stamens not in front of petals. Inserted on the corolla free from the stigma, same as in the Waterleaf. Calyx of five sepals, corolla five-lobed or plaited. Pistil making a round pod with two or four cells, and one or two erect seeds from the bottom of each cell.

15. **POLEMONIUM FAMILY.**—Stamens not in front of the petals or divisions of the corolla. Inserted on the corolla free from the stigma. One style, rarely two; sometimes cleft. Ovary and fruit with two or more cells.

Stamens five. Style three-cleft.
Erect or spreading herbs.

STAMENS MORE THAN PETALS.

Having decided that the stamens are more in number, next find the Family to which the plant belongs.

1. **PULSE FAMILY.**—Leaves compound. Stamens ten or more, when the flowers are regular. Though usually the flowers of this family are very irregular.

2. **FUMITORY FAMILY.**—Leaves compound. Stamens six, in two sets. Petals four and united. Tender herbs; leaves alternate, compound. Calyx of two scale-like sepals. Irregular corolla with four petals more or less grown together.

3. **MALLOW FAMILY.** Mucilage plants. Leaves simple, or so divided as to form a hand at the end of the stalk. With stipules. Often an involucrel or little calyx outside the true one.

Stamens many, all united so as to form a tube. Anthers kidney-shaped, one celled.

4. **CAMELLIA FAMILY.**—Shrubs or trees. Leaves simple, undivided. Stamens united only at the bottom, or entirely separate. Stamens very many, adhering to base of the corolla. Anthers two-celled. Calyx of five overlapping sepals. Fruit a woody pod with three or six cells containing few large seeds.

5. **EBONY FAMILY.**—Trees. Some kinds have axillary staminate flowers, clustered with a four-cleft corolla, and about sixteen stamens, other kinds have single and large flowers with a four-lobed corolla and eight stamens. Leaves simple, thickish—Calyx four cleft, thickish, rather large. Petals pale yellow, one pistil, four styles. Plum-like fruit, eatable when ripe, sweet and yellow, contains eight large, flat, bony seeds undivided. Stamens on the corolla, twice or *four times as many* as there are petals in the corolla.

6. **HEATH FAMILY.**—Leaves simple, undivided. Stamens separate from the corolla, and *twice as many* as there are petals.

STAMENS LESS THAN PETALS.

Having decided that the number of the stamens is less than the number of the petals, next find the family to which the plant belongs.

1. **SAGE OR MINT FAMILY.**—Corolla more or less irregular; usually two lipped. Ovary four-lobed, making when ripe four akenes. Stems *square*, Leaves opposite, and sweet-smelling. Two long and two short stamens, or only two perfect. Herbs.

2. **VERVAIN FAMILY.**—Corolla more or less irregular, usually two-lipped, or unequally five-lobed (rarely four). Ovary and fruit four-celled, four-seeded with four stamens in pairs as in Sage or Mint Family. Also ovary one-celled, making one akene. Four stamens.

3. **BROOM RAPE FAMILY.**—Corolla more or less irregular, usually two-lipped. Ovary and one-celled pod. Many seeded on the walls. No green leaves, but with scales in place of leaves. Yellowish or brownish throughout.

4. **BIGNONIA FAMILY.**—Corollas more or less irregular, usually two-lipped, and on receptacle, calyx free. Leaves opposite. Flowers large and showy. Stamens same as in Sage or Mint Family. Ovary and pod two-celled with many large, winged seeds. Also ovary and fruit four or five-celled with many large seeds.

5. **FIGWORT FAMILY.**—Corolla more or less irregular, usually two-lipped. Ovary and pod two-celled, with many or few small seeds. One style. Flowers often showy. Stamens as in Sage or Mint Family, rarely five present. Herbs.

6. **OLIVE FAMILY.**—Corolla regular. Stamens only two. Woody. Corolla four-lobed, ovary two-

celled with two ovules hanging from the top of each cell. Shrub or tree with opposite leaves. Stamens two and short. Fruit often one-celled and one-seeded.

7. **JESSAMINE FAMILY.**—Corolla regular, five-lobed, or salver-shaped. Two stamens. Woody. Ovary two-celled, but with two or three ovules erect from the base of cells.

POLYPETALOUS.

Having decided that your flower is polypetalous, next decide if

1. The stamens are more than ten; or
2. The stamens are ten or less.
3. If the stamens are more than ten, see page 69.
4. If the stamens are ten or less than ten, see page 71.

STAMENS MORE THAN TEN.

Having decided that your stamens are more than ten, next find if

1. The stamens are on the receptacle, *free from the calyx, corolla and ovary*; or
2. The stamens are connected with the petals and the petals borne on the receptacle; or
3. The stamens are borne on the calyx or just where the calyx separates from the corolla.

If the stamens are on the receptacle, free, see below.

If the stamens are connected with the petals, see next page.

If the stamens are borne on the calyx, see next page.

STAMENS ON THE RECEPTACLE.

Having decided that the stamens are on the receptacle, next find the family to which the plant belongs.

1. **CROWFOOT FAMILY.**—Pistils more than one, entirely separate from each other. Herbs, or sometimes slightly woody. Perfect flowers—parts separate and inserted on the receptacle. Leaves cut, toothed or sometimes compound. Stamens more than twelve. Petals sometimes wanting, or of odd shapes. Fruit akenes, pods or sometimes berries.
2. **WATERSHIELD FAMILY.**—Pistils more than one and entirely separate one from the other. Herbs. Perfect flowers—dull purple on a slender stem rising in the water. Sepals and petals narrow, each four. 12 to 18 stamens, leaves like a shield, the stem running from the middle.

3. **MOONSEED FAMILY.**—Pistils more than one and separate from each other. Woody vines. Pistils found in one flower, stamens in another. Leaves shield-shaped, but the stem nearer the edge than in the Watershield. Fruit a small drupe with a moon-shaped or kidney-shaped stone. Sepals and petals of the same color, and each from four to six.

4. **CUSTARD-APPLE FAMILY.**—Pistils more than one entirely separate from each other. Small trees with perfect flowers. Flowers have six petals. Whole leaves.

5. **MAGNOLIA FAMILY.**—Pistils many grown together, one above another on a receptacle. Trees or shrubs with strong-scented and bitter bark, leaves alternate, simple, never toothed, large thin stipules cover the buds but fall off early. Large flowers, one at the end of a branch, their sepals three and colored like the petals, and six petals in two rows or nine in three. Very many stamens with long anthers on the side of the filaments. Fruit a sort of cone.

6. **NELUMBO FAMILY.**—Pistils several and sunk separately in the flat top of a very flat broad receptacle. Sepals and petals in many ranks—alike—stamens under the pistils and falling off early. Fruit round, and eatable nuts.

Leaves very large, round, attached underneath in the middle, cupped, rising out of the water as do the large greenish-yellow flowers from long stalks.

7. **CROWFOOT FAMILY.** Pistils three to six. Ovaries partly grown together in a circle. A bladder-like pod of several cells. (Fennel flower.)

8. **MIGNONETTE FAMILY.**—Pistils three to six growing together in a circle. One-celled pod with horns. Ovaries like the Fennel flower.

Herbs with alternate leaves and small, dull-looking flowers in a crowded raceme or spike. Sepals four to seven, green and open in the bud. Petals four to seven, unequal on broad claws, the small blade cut into several narrow slips. Stamens ten or more, turned to one side and borne on an enlargement of the receptacle.

MAY APPLE in

9. **BARBERRY FAMILY.**— Pistil only one, though occasionally there may be more. The ovary however is simple, one-celled. Petals six to nine and quite large. Leaves one or two and having many lobes. Stamens the same number as petals and opposite each lobe on the receptacle. Anthers opening by uplifted valves or doors on each side. Root rather poisonous, but fruit eatable.
10. **CROWFOOT FAMILY.**— Pistil one, though occasionally there may be more than one. The ovary, however, is simple, one-celled. Petals four and irregular in shape, or else very small. Herbs or slightly woody plants.
11. **PURSLANE FAMILY.**— Pistil only one, at least having only one ovary, the ovary however is compound, and has many seeds on stalks on the floor of the cells. Rather fleshy herbs with entire leaves. Flowers only open in sunshine. Sepals two, petals five, with a stamen before each one, or many stamens.
12. **POPPY FAMILY.**— Pistil one or at least only one ovary. Ovary compound, or if it is simple—that is one-celled, it will have two or more groups of seeds on the inner walls. Calyx falls *when the flower opens*. There are less sepals (two rarely three) than petals. Juice, milky, yellow or reddish, bitter and poisonous. Stamens many on receptacle.
13. **LINDEN FAMILY.**— Pistil and ovary like the Poppy. Calyx falls *after the flower opens*. One style. Several cells in the ovary. Five sepals which stand edge to edge in the bud. Fruit is dry and one-seeded. Five cream-colored petals. Very many stamens in five clusters. Anthers two-seeded.
Leaves heart-shaped, often oblique at base. Flowers in small clusters on a hanging peduncle from the axil of a leaf and united part way with a narrow leaf-like bract.
14. **ORANGE FAMILY.**— Like the Linden Family except that the sepals overlap in the bud, and the fruit is many-celled.
15. **ST. JOHN'S-WORT FAMILY.**— Herbs or low shrubs. Pistils one, or at least one ovary. Ovary compound, or if not compound containing groups of seeds on the walls. Calyx does not fall off. Leaves opposite, and covered with transparent or dark-colored spots, on or both. Four or five persistent sepals, petals the same number or more. Many stamens in three or four clusters. Five styles, separate or sometimes united.
16. **CISTUS FAMILY.**— Like the St. John's-wort, except that the ovary is one-celled, and the leaves are not spotted.
17. **SIDE-SADDLE FAMILY.**— Pistil one or at least one ovary. Ovary compound, or if not compound, having groups of seeds on the inner walls. Calyx does *not* fall off. Leaves not spotted. Ovary five-celled. A bog-plant. Leaves pitcher-shaped. Style like an umbrella. Sepals five, colored, and below the calyx are three small bractlets. Petals fiddle-shaped, curved inwards, five-celled. Many stamens.
18. **WATER-LILY FAMILY.**— Pistil only one, at least having one ovary. Ovary several-celled. Leaves not dotted; shield-shaped or deeply heart-shaped. Petals and stamens generally very many. *No style.*

STAMENS CONNECTED WITH PETALS.

Having decided that the stamens are connected with the bottom of the petals next find the Family to which the plant belongs.

1. **MALLOW FAMILY.**— Filaments united in a long tube. The anthers are kidney-shaped. Ovary one-celled. Leaves palmately-veined with stipules. Petals united at base with tube of stamens. Often an outer calyx under the true one called an *involucl*. Showy flowers.
2. **CAMELLIA FAMILY.**— Filaments united only with the base of the petals. The anthers are oblong. Ovary two-celled.

STAMENS ON THE CALYX.

Having decided that the stamens are on the calyx, next find the Family to which the plant belongs.

1. **CAROLINA ALLSPICE FAMILY.**— Many petals, and many rows of them. Shrubs. Simple leaves. Purplish flowers. When bruised giving out a fragrance like strawberries.
2. **CACTUS FAMILY.**— Petals in many rows. Leafless, except little scales or points, thick fleshy plants. Strange shapes. There are always many stamens, and usually many petals. A one-seeded ovary which in fruit becomes a berry.
3. **WATER-LILY FAMILY.**— Many rows of petals. Large flowers on a long scape which with the leaves float on the surface of the water. Stamens many.
4. **ROSE FAMILY.**— Four or five petals, or sometimes six. Alternate leaves. Stipules. Stamens more than ten on the persistent calyx.

5. **LYTHRUM FAMILY.**—Petals four, five, or sometimes six. Leaves opposite but no stipules. Many-seeded pods. One style. One stigma. A free cup-shaped calyx around the pod. Calyx of from four to seven teeth and as many additional projections between the teeth.
6. **SAXIFRAGE FAMILY.**—Petals four, five, sometimes six. Leaves without stipules.
Styles or stigmas any number from three to eight. Calyx clings to the ovary. Shrubs. Leaves opposite. Several cells in the pod. (*Philadelphus*).
7. **PURSLANE FAMILY.**—Like the *Philadelphus*, in petals, leaves, styles, and calyx.
Herbs. Fleshy leaves. Pod one-celled, and opens like a box with a little lid.

STAMENS TEN OR LESS.

Having decided that the stamens are ten or less, next ask

1. Is the corolla regular or nearly so? or
2. Is the corolla irregular and the pistil one?
If regular, see next column.
If irregular, see below.

IRREGULAR COROLLA.

Having decided that the corolla is irregular, next find the Family to which the plant belongs.

1. **HORSE-CHESTNUT FAMILY.**—Leaves opposite and arranged like a hand. Five teeth in the calyx. Shrubs or trees. Flowers in thick panicles. Ovary three-celled with a pair of ovules in each cell, only one or two ripening.
2. **PULSE FAMILY.**—Leaves alternate. Stipules. Filaments often united. The anthers, however, are separate. The two lower petals are joined or are very nearly joined. Butterfly-shaped corolla. Simple pod, with one row of seeds.
3. **VIOLET FAMILY.**—Leaves alternate. Stipules. Short filaments. Five anthers which are joined together by their edges around the pistil. The lower petal has a little sac at its base. A pod with three rows of seeds. Five petals, five sepals, one pistil.
4. **BALSAM FAMILY.**—Leaves alternate. Calyx and corolla colored alike and hard to distinguish. Stipules none. Flower has one or two spurs. Five short anthers which are slightly joined. Pods burst if touched into five coiling pieces. Five short stamens.

5. **INDIAN CRESS FAMILY.**—Leaves alternate. No stipules. Stamens eight. Odd little fruit of three, thick closed pieces. Calyx projecting with a long hollow spur behind, five-cleft, petal-like. Five petals; two borne on calyx throat and the other three with claws.
6. **FUMITORY FAMILY.**—Leaves alternate. No stipules. Six stamens, arranged in two sets, the middle anther of each set is two-celled the side ones only one-celled. Closed flower. One-celled pod. The two inner petals with spoon-shaped tips sticking together over the anthers. The two outer petals larger with small spreading tips.

REGULAR COROLLA.

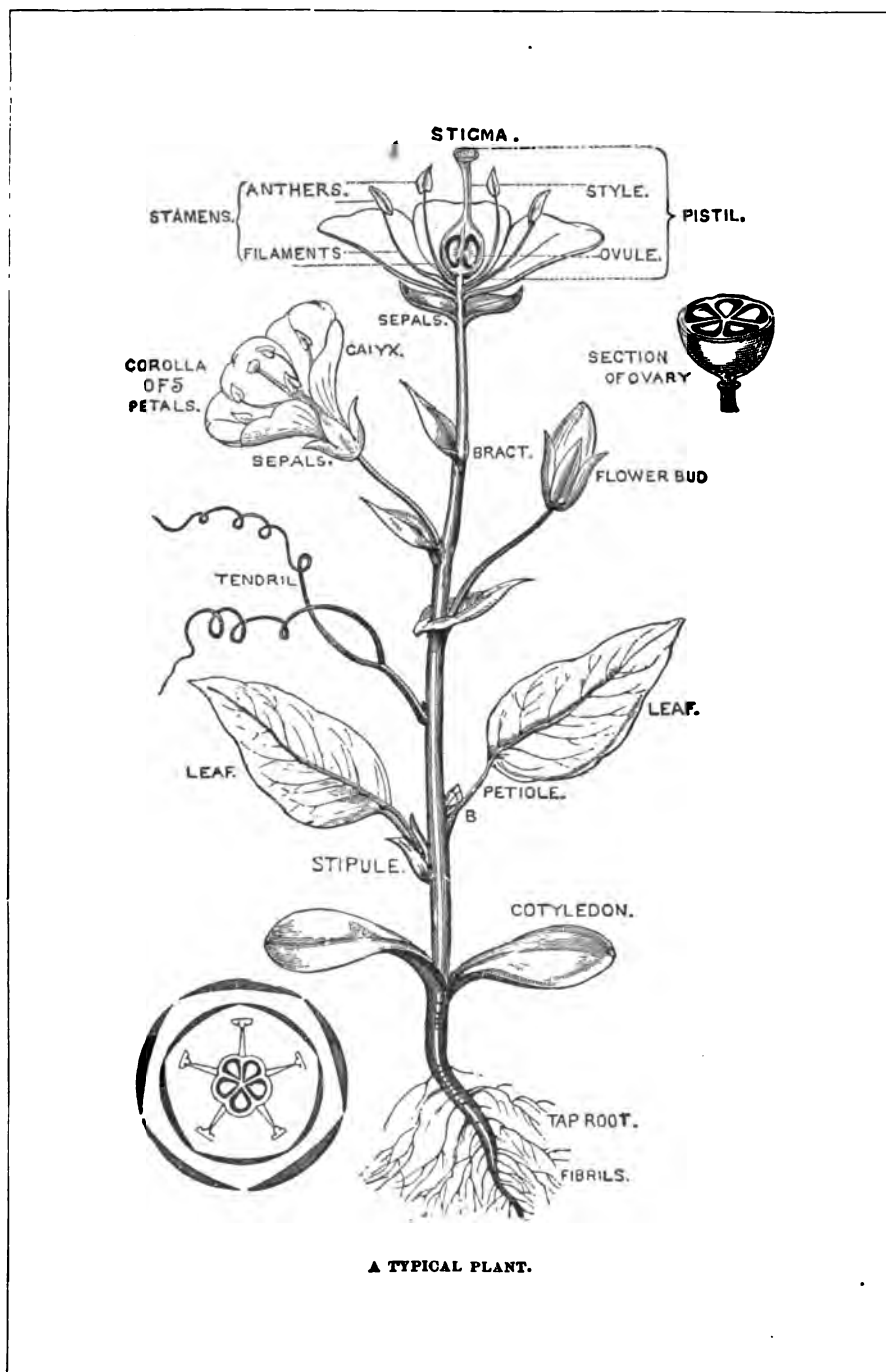
Having decided that the corolla is regular, or nearly so, next find the Family to which the plant belongs.

1. **MOONSEED FAMILY.**—Stamens and petals the same number, four or six. Each stamen stands in front of a petal. More than one pistil, all separate. Petals six. Flowers dioecious. Woody climbers, with alternate leaves. Sepals and petals of the same color and number. Fruit little drupes, with a moon-shaped or kidney-shaped stone.
 2. **LEADWORT FAMILY.**—Stamens and petals arranged like the Moonseed. One ovary with one pistil which divides into five separate styles. Dry, scaly, funnel-shaped calyx.
 3. **BARBERRY FAMILY.**—Stamens and petals like the Moonseed. Pistil and style one, though the style is sometimes cleft at the top. Petals six or eight. Anthers lift up like a little door.
 4. **GRAPE VINE FAMILY.**—Stamens, petals, pistil, like the Barberry. Anthers open lengthwise. Woody vines. Very small calyx with scarcely any lobes. Petals fall early.
 5. **BUCKTHORN FAMILY.**—Stamens, style and pistil still like the Barberry. Anthers open lengthwise; shrubs. Calyx not very large, and has four or five parts.
- PURSLANE FAMILY.**—Stamens, style and pistil like the Barberry. Anthers open lengthwise. Herbs. Ovary and pod one-celled. Two sepals. Five petals. Three stigmas.
7. **PRIMROSE FAMILY.**—Stamens, style and pistil still like the Barberry. Anthers open lengthwise. Herbs. Sepals the same number as the petals. One single style. One stigma. One-celled ovary or pod with one large seed-bearing line rising from its base and bearing few or many seeds. Regular perfect flowers.

8. **GOURD FAMILY.**—Stamens *as many as the petals*, and *alternate* with them, or *twice as many*, or of *some unequal number*.
Calyx clings to the ovary. *Perfect Flowers*.
Three stamens more or less united.
Tender herbs with alternate, radiate-veined leaves and with tendrils.
9. **CURBANT FAMILY.**—Stamens distinct. As many or twice as many as the petals. Shrubs, alternate, rounded and radiate-veined leaves. Many seeds in a one-celled berry. Calyx tube coherent with the ovary and continued above into a cup which is often colored like a corolla, and bears the five little petals and five stamens.
10. **SAXIFRAGE FAMILY.**—Stamens distinct, five or more. As many or twice as many as the petals. Seeds many in a two-celled or a one-celled pod. Two styles. Pistils generally more or less united with the tube of the calyx and with each other. Petals five (rarely four) on the calyx.
11. **EVENING PRIMROSE FAMILY.**—Stamens distinct. As many or twice as many as petals. Many seeds. Four-celled pod. One style. Four stigmas. Parts of the flower in fours, calyx tube coherent with the four-celled ovary and prolonged above bearing few petals and four or eight stamens.
12. **CORNEL FAMILY.**—Stamens distinct. As many or twice as many as petals. One to five seeds in each cell. Very hard to find the border of the calyx.
Flowers in cymes or heads. Style one; stigma one. Shrubs or trees. Ovary a berry-like stone fruit.
13. **PARSLEY FAMILY.**—Stamens distinct. Five petals and five stamens on the top of the ovary. As many or twice as many as petals. Seeds one to five in each cell. Leaves compound or much cut. Flowers in compound umbels. Styles two. Fruit, dry two-seeded, splitting when ripe, two akenes. Hollow stems.
14. **ARABIA FAMILY.**—Stamens distinct. As many or twice as many as petals. Seeds one to five in each cell. Shrubs or trees. Flowers in panicles or in simple umbels. Style three to five, rarely two. Fruit a berry.
15. **ST. JOHN'S-WORT FAMILY.**—Herbs or low shrubs. Leaves simple, opposite, and dotted or punctured. acrid juice. Four to six sepals which do not fall off. Stamens many in three or five clusters, borne on the receptacle. Styles two to five, sometimes separate, sometimes joined. One ovary or seed cradle. A pod either one-celled with two to five seed-bearing lines, or as many cells as seed-bearing lines.
16. **RUE FAMILY.**—Calyx free from the seed-cradle or at least from the fruit.
Leaves dotted or punctured. *Compound*. Stamens on the receptacle as many or twice as many as the petals. Sharp-tasting. A strong-smelling oil in the dots of the leaves.
17. **ROSE FAMILY.**—Like the Rue, except that there are no holes in the leaves. The alternate leaves have stipules. There is more than one pistil. Regular flowers. Petals generally five. Stamens ten or more inserted on the calyx. Seeds few, and the whole kernel is embryo.
18. **STONECROP FAMILY.**—Calyx free. Leaves without holes. Pistils four or five. Herbs. Leaves thick and fleshy. Flowers regular, perfect and symmetrical. Sepals, petals and pistils all the same number and separate. *No stipules*. Pod with few or many seeds.
19. **SAXIFRAGE FAMILY.**—Calyx free. Leaves without holes. Pistils two, somewhat joined, but nearly distinct. *No stipules*. Herbs; leaves generally alternate. Petals on calyx. Stamens five or ten generally.
20. **PULSE FAMILY.**—Calyx free. Leaves without holes or transparent dots. Pistil one; simple, one-celled ovary. One style. One stigma.
21. **HEATH FAMILY.**—Calyx free, corolla generally monopetalous. Leaves without holes. Style one, whole, or a little cleft at the top. Anthers opened by little holes or chinks at the top; or anthers open *across* the top.
Stamens free from corolla, and as many or twice as many as the petals. Fruit several-celled.
22. **LYTHRUM FAMILY.**—Calyx free from the ovary. Pistil one, compound in some part. One whole style or a little cleft at the top. Anthers open lengthwise. Herbs entire and mostly opposite leaves without stipules. Calyx does not fall off. Stamens on the calyx.
23. **CRESS FAMILY.**—Calyx free from ovary. Four sepals.
Pistil one, and compound in some one of its parts. One style which is whole or a little cleft at its top. Anthers open lengthwise. Six stamens, two of them shorter than the other four. Stamens are on the receptacle. Herbs. Petals have little claws and spread so as to form the four arms of a cross. A partition stretches across the pod from the two thread-like placentas, and divides the pod into two cells.
24. **FRINGE-TREE (OLIVE.)**—Calyx free from ovary, Corolla of four, very long, narrow petals, barely united at the base. Flowers in slender-drooping panicles of snow-white blossoms.
Pistil one, compound in some one of its parts. Style one, whole or a little cleft at its top. Anth.

- ers open lengthwise. Four long petals. Stamens less than the number of the petals. Woody. Few seeds in the fruit.
- 25. STAFF-TREE FAMILY.**—Calyx free from the ovary. One pistil compound in some one of its parts. One style either whole or a little cleft at the top. Anthers open lengthwise. Woody. Broad petals. Stamens the same in number as the petals. Pod colored of two to five mostly one-seeded cells, showy when ripe in autumn.
Leaves simple, alternate or opposite. Stamens on an enlargement of the receptacle disc which fills the bottom of the calyx.
- 26. SUMACH FAMILY.**—Calyx free from the ovary. One pistil compound in some of its parts. Styles or close sitting stigmas two to six; or the style may be two-cleft or five-cleft. Ovary and fruit one-celled, one-seeded. Shrubs. Flowers greenish-white or yellowish. Sepals, petals and stamens five. Stamens on a thickened part of the receptacle which fills the bottom of the calyx.
- 27. PINWEED IN CISTUS FAMILY.**—Calyx free from ovary. Pistil one, compound in some one of its parts. Styles or close-sitting stigmas two to six; or style two to five-cleft. Ovary and fruit one-celled, six seeded, on three little points on the wall.
- 28. PINK FAMILY.**—One pistil, compound in one or more of its parts. Styles or close-sitting stigmas two to six. Styles or stigmas generally separate, two to five. Several seeds in the centre of the pod. Opposite leaves. Herbs. Stamens not more than twice the number of petals or sepals, and often fewer on the receptacle or the calyx.
- 29. SAXIFRAGE.**—Calyx free from ovary. Pistil one, compound in some of its parts. Styles or close-sitting stigmas two to six, or style two to five-cleft. Several seeds. Seeds on the walls or the bottom of the pod. Stamens many. Herbs.
- 30. PASSION FLOWER FAMILY.**—Calyx free from ovary. Petals five, with a crown or ring of a double or triple fringe inserted on the base of the calyx. Pistil one, compound in some one of its parts. Styles or close-sitting stigmas two to six, or two to five-cleft.
Many seeds along the walls of a long-stalked berry. Three or four rows. Stamens five, filaments partly joined and making a long sheath on the slender stalk of the ovary.
- 31. HOLLY FAMILY.**—Calyx free from the ovary. Pistil one, compound in some of its parts. Ovary with two to five cells. Fruit a berry-like drupe. Stigmas and stamens close-sitting four to six. Trees or shrubs with alternate leaves and small regular axillary flowers.
- 32. BLADDERNUT FAMILY.**—Calyx free from the ovary. Pistil one, compound in some of its parts. Styles three. Leaves opposite and compound, pinnate or with three leaflets, having stipules and little stipules (stipels). Ovary with two to five or more cells. Stamens five and alternate with the five petals.
- 33. MAPLE FAMILY.**—Calyx free from the ovary. Ovary with two or five or more cells. Styles or long stigmas. Two stigmas. Two styles. Fruit two-winged. Pistil one, compound in some parts.
- 34. FLAX FAMILY.**—Calyx free from the ovary. Sepals five, overlapping in bud. Pistil one, compound in some one of its parts. Ovary with two to five or more cells.
Herbs with a tough fibrous inner bark and simple leaves.
Styles or divisions of the style, five. Stamens five. Pod partly or completely ten-celled, and splitting when ripe into ten pieces with one seed on each part. Seeds oily.
- 35. WOOD SORREL FAMILY.**—Calyx free from the ovary. Pistil one, compound in some one of its parts. Small herbs with sour juice.
Ovary with two to five or more cells. Stamens ten. Five-celled pod. Compound leaves; three leaflets.
- 36. GERANIUM FAMILY.**—Calyx free from the ovary. Pistil one, compound in some one of its parts.
Ovary with two to five or more cells. Styles five, or in five divisions. Stamens ten or fewer with anthers. Styles united with a long beak, then those styles split and branch off in horns when the pods are ripe.
Five, small, one-seeded pods. Herbs or small shrubs with scented leaves, having stipules, the lower ones opposite. Sepals five overlapping. Petals five.





A BLACKBOARD EXERCISE.



DWARF CORNEL OR BUNCHBERRY.

AN EXOGEN.

POLYPETALOUS DIVISION.

Stamens ten or less.

Corolla Regular.

Stamens distinct.

Calyx clings to the seed-cradle.

Seeds one in each cell.

A terminal flower.

CORNEL FAMILY.

Four Petals.

Four Stamens.

Four teeth for the calyx.

One Style.

Seed-cradle two-celled.

Entire opposite leaves.

DWARF CORNEL OR BUNCHBERRY.

A low herb.

Four or six leaves near the top of stem.

Grows in damp woods.

DESCRIPTION OF PLANT.

ROOT.		LEAF.	
Kind		Situation	
Shape		Arrangement on stem	
Duration		Parts	
STEM.		Kind	
		Veining	
		Outline	
		Margin	
		Apex	
		Base	
		Lobes	
		Surface	
		Duration	
		Color	
Class			
Kind			
Texture			
Shape			
Height			
Surface			
Direction			
Juice			
Branches			

FLOWER.

ORGAN.	No.	COHESION.	ADHESION.	FORM, ETC.
Perianth				
Leaves				
Calyx				
Sepals				
Corolla				
Petals				
Stamens				
Filaments				
Anthers				
Pistil				
Carpels				
Ovary Cells				
Styles				
Stigmas				

DESCRIPTION OF PLANT — Continued.

81

INFLORESCENCE.

Kind
Class
Symmetry
Regularity
Perfectness
Completeness
Bracts

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.....
.....
.....
.....
.....
.....

FRUIT.

Kind
When Ripe

.....
.....

SEEDS.

Number
Kind

.....
.....

MOUNTED SPECIMEN.

(Drawing or Tracing.)

REMARKS.

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CLASSIFICATION.

Order
Class
Division

.....
.....
.....

Name

} Common
} Scientific

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.....

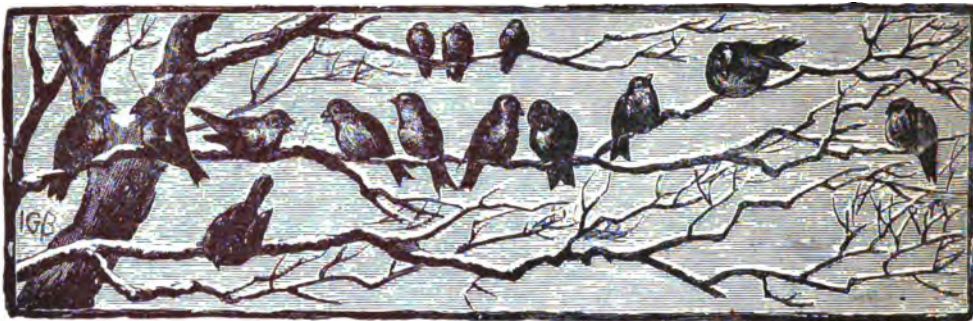
NOTES.

Habitat
Locality
Date
Number

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.....
.....

CHARACTERS OF THE ORDER.

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.....
.....
.....



PART III.

FAMILIES OF ENDOGENS.

Flower in the crannied wall
I pluck you out of the crannies,
Hold you here, root and all in my hand.

Little flower,— but if I could understand,
What you are, root and all, and all in all,
I should know what God and man is.

— TENNYSON.

The members of a flower family, like those of a human family, have certain family resemblances, either in looks, or in manners, or in disposition.

ARUM FAMILY.

There are six members to this family, and they are all rather thickset, fleshy people, rather sharp and acrid in their tastes.

They have some very disagreeable traits, which make them not very much of favorites in polite society. For instance there is the

SKUNK CABBAGE.— Which starts up in the early spring as a very pretty little purple spadix: but by and by as it grows older, it grows rather unpleasant. It spreads out some great coarse leaves, and has such an odor! Just like a skunk.

INDIAN TURNIP.— Or, to call it by the far prettier name which you children give it, “Jack-in-the-Pulpit,” has a spadix and such an odd little hood which it pulls over its head. The spadix looks for all the world as if it had fallen into the flower, head first. There are the blossoms down in the bottom of the cup, and the other flowerless end sticking up in full view under the hood. The spadix is what you call Jack; and he does look, indeed, like the “priest all shaven and shorn.” The sheath is his pulpit, and as he preaches in such large places and to such scattered audiences, I suppose the part that hangs over his head may act as a sort of “sounding-board,” such as one sometimes sees in very old churches.



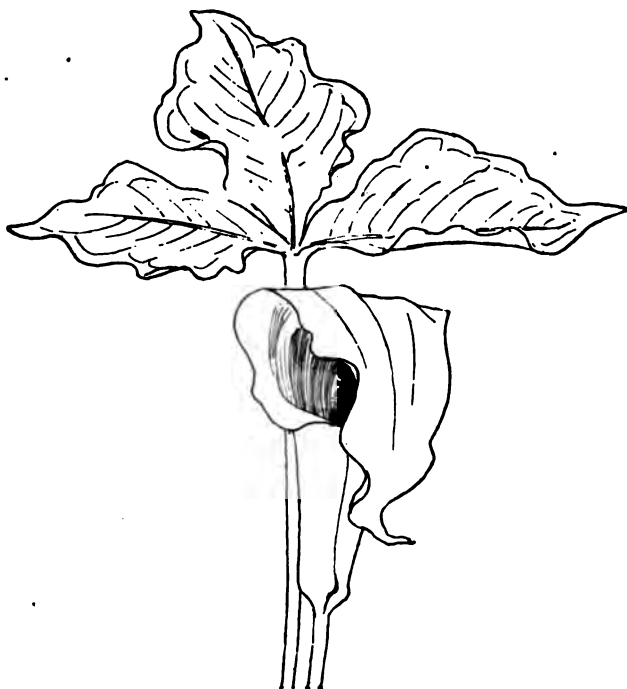
LORDS AND LADIES (*Arum maculatum*.)

a, plant; b, spadix; c, pollen blossom; d, stamen blossom; e, section of fruit.

ARROW-ARUM.—Which has naked flowers. The spathe covering the whole length of the spadix. Leaves are arrow-shaped, or sometimes heart-shaped. The spathe is green and the flower grows in shallow water.

CALLA.—If the plant is like the Arrow-Arum except that the spathe is white, then we call it a Calla.

GREEN DRAGON.—Has only one leaf on a stalk, ten or twelve inches high, and scape which bears the flowers is taller than in the Jack-in-the-Pulpit. The spadix is not covered with the sheath, which rises in a point above it. The berries when ripe are deep orange and are in an ovate cluster.



JACK-IN-THE-PULPIT.

GOLDEN CLUB.—Those four members of this family all wore spathes; but here is one that leaves his off, and comes out an uncovered spadix, very early in the spring. This spadix is at the top of quite a long scape, which stands up boldly in the water. The leaves are oblong and are on a long stem.

SWEET FLAG.—The boys all know this, I am sure. Such fun to wade into the water for it and pull it up by the roots! It has long waving, sword-shaped leaves; and its roots are very strong-tasting and strong-smelling. People sometimes cut the roots in small pieces, cook them in sugar and eat them. Too much of it, though, will give you a terrible burning in the throat and stomach which all the water you can drink will not seem to help.

CAT-TAIL FAMILY.

CAT-TAIL.—This is an old friend of yours, I am sure. See, the flowers are in a long spadix, and the only ones that have stamens are the ones up close to the top, while the only ones that have any pistils are those below. It has a long, long stalk which is covered, as any cat-tail should be, of course, with fur.

BUR-REED.—These grow in marshy places, as the cat-tails do. They are not true cat-tails though, for they have no fur on them. They have their flowers in heads, one head of which you will find has all the pistils in its flowers, while another has all the stamens.



ARROW-ARUM.



CALLA.



SWEET FLAG.

1, root and stem; 2, spadix; 3, flower; 4, fruit.



PAINTED TRILLIUM.

TRILLIUM FAMILY.

You call these sometimes the "Wake Robins." Such a regular little plant. Everything in threes! A whorl of three bright, shining leaves! The flower leaves a round, purple berry. There are different kinds of Trillium. There is the one that sits close down to the ground; another that stands up tall and erect; another whose flower is very large; and another found in very damp, cold places which has such pink or purplish lines at the base of its petals, that it is has been called the "Painted Trillium." Another one still that sits close to the ground, has a little flower on such a slender little stem that it keeps mid-nid-nodding all the time until botanists have come to call it the "Nodding Trillium."

INDIAN CUCUMBER.—The flowers are umbellate, that is, you remember, like an inverted umbrella. Springs up from a white-tube-shaped root, which lies horizontally in the earth. This root tastes like a cucumber, hence its name. The leaves are whorled and the flowers greenish-yellow, with three sepals, three petals, three stigmas, six stamens. The stigmas are close-sitting, long and thread-shaped. The Trillium has many seeds in its fruit; this has only a few.

SESSILE-FLOWERED TRILLIUM.—The flowers and the ovate leaves are both sessile. The petals are rather erect, and are of a dark, purple or greenish color.

RECURVED TRILLIUM.—The leaves narrow at the base into a footstalk. The sepals turn down, and the petals narrow at both ends. The flowers are like those of the sessile-flowered Trillium.

NODDING TRILLIUM.—The leaves are nearly sessile and rather broadly-ovate. The flowers are small and on a flower-stalk curved down under the leaves. The petals are oblong-ovate. They are pointed, recurved and wavy.

ERECT TRILLIUM or BIRTHROOT.—The leaves are sessile, and rounded with a very abrupt point. The flowers are on a nearly upright stalk. The petals are ovate shape, acutish, spreading, and of a dull purple color, but sometimes greenish-white.

GREAT-FLOWERED TRILLIUM.—Leaves and flower-stalk nearly the same as those of the Erect Trillium. The petals are obovate, erect at the base, then gradually spreading much longer and broader than the sepals. They are white, turning rose-color when old.

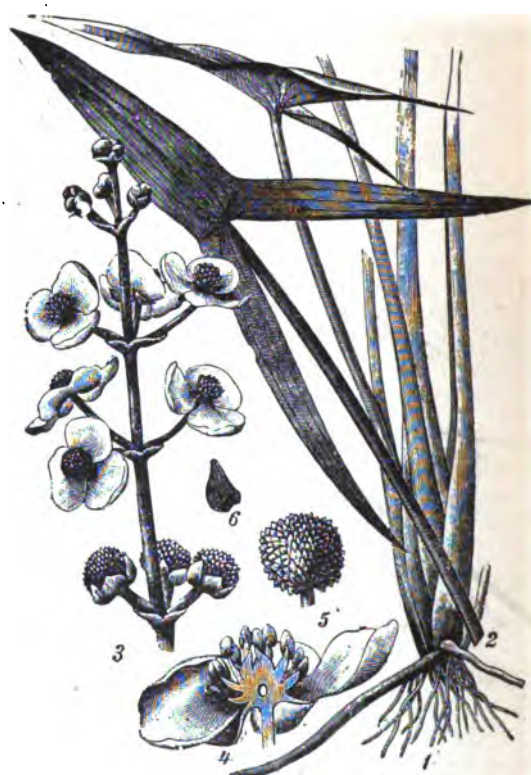
PAINTED TRILLIUM—The leaves have a footstalk. They are pale-green, ovate and taper-pointed. The flowers grow on an upright flower-stalk. The petals are lance-ovate, and pointed. They are widely spreading, longer than the sepals, wavy, white, and adorned with delicate, pink-purple stripes at the base. They are found in cold, damp woods.

WATER PLANTAIN FAMILY.



COMMON WATER PLANTAIN.

1, branch; 2, flower; 3, section; 4, fruit.



ARROW HEAD.

1, root; 2, stem and leaf; 3, flower; 4, section of flower; 5, fruit.

The plants of this family are marshy plants. The blossoms have a distinct calyx of three greenish sepals. The corolla, three-parted, has many stamens on the receptacle. The pistils arranged in a ring or in a head, make

the akene of the fruit. The flowers are on scapes. The leaves are long, heart-shaped, lance-shaped or arrow-shaped, and some of them have cross veinlets.

The most common members of this family are :

WATER-PLANTAIN.—A marshy plant with white flowers with six stamens in a panicle, and fifteen to twenty pistils in a ring.

ARROW-HEAD.—These flowers are in a loose spike or in a raceme. The stamens are on one flower, and the pistils on another. The pistils are arranged in a head with little winged akenes. Leaves are usually arrow-shaped.

SPIDERWORT FAMILY.

The plants of this family are tender herbs, with alternate parallel-veined leaves, which are wrapped around the stem at the base. The flowers are perfect and have three greenish sepals and three petals on a receptacle. They have one pistil with one long style and one stigma. The pods are small, three-celled or two-celled, with few seeds.

The flowers open in the morning for only one day, and then the delicate purplish petals melt away.

There are two members of this family found wild, but the one you will be most likely to know about is the Spiderwort of the garden.

SPIDERWORT.—Regular flowers with three petals and six stamens. Leaves long, slender, and close-sitting on the stem. Little spidery hairs growing on the filaments.

Perhaps you know this little plant by its common name "Wandering Jew."

DAY-FLOWER.—Irregular flowers. Two of the petals are kidney-shaped, and have long claws and the other petal quite small.

The stamens, too, are not alike. Only three of them having good anthers. The lower leaves have foot-stalks; but the upper leaves are close-sitting and somewhat heart-shaped.

PICKEREL WEED FAMILY.

This has two or three brothers in the flower kingdom, but they show themselves so rarely we will speak only of this one. This is common, indeed, in the shallow water about the edges of ponds. It stands up, a pretty,

purple spike—so pretty that you will often be tempted to reach out from your boat to pick them. But they will always disappoint you. They will always be a little "gone by." Their petals look as if every other one had been scorched. This is because the three lower of the six petals which each flower has last only one day, then curl up and wither.

COMMON PICKEREL WEED.—Leaves ovate, oblong, generally more or less heart-shaped at the base. Perianth blue, of six divisions. Style one; stigma three-lobed. Flowers all summer.



PICKEREL WEED.

GREEN BRIER, OR SMILAX FAMILY.

SMILAX.—A lone bachelor is this plant—living all alone—with never “a chick nor a child” neither “kith nor kin.”

He is always climbing, and has little tendrils on each side of the foot-stalks. The leaves are veiny, almost like the *Exogens*; alternate, and sometimes “evergreen.”

Flowers are in umbels, some of them having all the stamens, others all the pistils.

Fruit a berry with two or a very few seeds.

COMMON GREEN-BRIER or CAT-BRIER.

The leaves are thickish; are round-ovate or slightly heart-shaped, and have from five to seven ribs, and are green on both sides.

The branchlets are often square with short prickles. The peduncles or flower-stalks of the umbel are not longer than the petiole or foot-stalk of the leaf.

They are found in moist thickets.

GLAUOUS GREEN-BRIER—The leaves are ovate and glaucous beneath, that is, there is a fine white powdery matter on the underside that rubs off. The peduncles are longer than the petiole. The branchlets are often square, and prickles short like the Cat-brier.

BRISTLY GREEN-BRIER.—These leaves are ovate and heart-shaped. They are large and thin, and green on both sides.

The stem below is covered with long and weak blackish, bristly prickles. The peduncles are much longer than the petioles. They are found in thickets.

LAUREL-LEAVED GREEN-BRIER.—They are not prickly. The leaves are lance-oblong, between lanceolate and oblong, or lance-linear, between lance-shaped and linear. They are thick and evergreen, and have from three to five ribs.

The peduncles (flower-stalks) of the umbel are very short.

They are found in sandy soil.

CARRION-FLOWER GREEN-BRIER.—The leaves are thin, pale, and mostly heart-shaped, with seven to nine ribs. Sometimes they are rather downy beneath. They have long petioles. The peduncles are from three to eight inches long. They are longer than the leaves.

The flowers are of the odor of carrion.

They are found in meadows and on river-banks.

COLCHICUM FAMILY.

COLCHICUM.—The flowers and leaves both rise from an under-ground bulb. A long tube-shaped cover, bearing six simple, petal-like lobes. Poison.



COLCHICUM.

COLCHICUM (*Colchicum*).—The flowers and leaves rise from a solid bulb or cormb under-ground. The perianth, or leaves of the blossom, forms a long tube, and bears six similar petal-like lobes.

MELANTHIUM (*Melanthium*).—The flowers have a perianth (blossom-leaves) of six separate leaves, and these leaves (perianth) remain, or perish, and wither without falling. The plant is acrid-poisonous.

The flowers are polygamous—that is, some have only stamens and some only pistils, while others are perfect flowers. They are in panicles, that is, they form a compound, branching flower-cluster, and end in a simple leafy stem.

WHITE HELLEBORE (*Veratrum*).—The divisions of the perianth have no claws. They are of a greenish color. The leaves are oval or oblong. They are partly clasped and are plaited. The flowers have a blossom-leaf of six separate leaves.

BELLWORT (*Uvularia*).—The perianth falls off after flowering. The plants are not poisonous. The stems are generally forking. The leaves are sessile or clasping. They are ovate or lance-oblong. The flowers are perfect. They are generally single and nodding. The divisions of the perianth are long and narrow.

The perianth is large, lilly-like and yellowish. The fruit is a pod and has few seeds.

The styles unite at the bottom into one. The flower-stalk is not twisted or jointed. The flowers have a perianth (blossom-leaves) of six separate leaves.

TWIST STALK (*Streptopus*).—The styles unite into one almost to the top.

The perianth is of a whitish or rose-color and its divisions are recurved.

The fruit is a red berry with many seeds.

The flower-stalks are single in the axil of the leaves, and have a joint or abrupt bend or twist in the middle.

The flowers are like those of the other kinds with blossom-leaves of six separate leaves.

LARGE-FLOWERED BELLWORT.—The leaves are oblong, and clasping-foliate, that is the stem appears to run through the lower part of the leaf. The perianth is a pale, greenish-yellow and one and a half inches long. All the species flower in the spring, and are found in rich woods.

PERFOLIATE BELLWORT.—This is like the Large Flowered Bellwort but the flower is smaller and yellow. The anthers are more pointed.

SESSILE-LEAVED BELLWORT.—This is smaller than the rest. The leaves are sessile, and do not encompass the stem. The flower is cream-color.

LILY FAMILY.



BULB OF THE LILY.

Such a large family as this is! No less than sixteen of them living about in our

gardens, and fields. Some of them are so beautiful and grand "fit for the queen," as people sometimes say when they wish to express great admiration for an object. Others, again are so homely and commonplace that no one but Bridget herself would care to have them around every day.

All the members of this family have parallel veins, perfect, regular flowers, the covering in six parts, all colored alike, and inserted free from the ovary. The fruit is a pod or a berry.



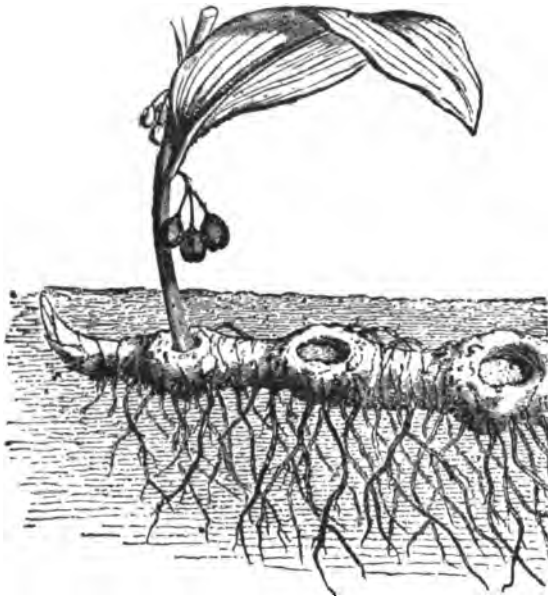
BRANCH OF ASPARAGUS.

ASPARAGUS.—Well, who would have thought of Asparagus as a lily. Herbs from foot-stalks, no bulbs. Stems very branching. And the leaves very fine threads. Perhaps you have often broken off a big bough of it, and have carried it, into the house, with its pretty red berries to decorate with. It does not wither and droop, but turns yellow and dry when kept in the house. Country children think it makes a beautiful dry bouquet. When it makes its first appearance above the ground, it is cut, fastened into bundles, and sold at the market.

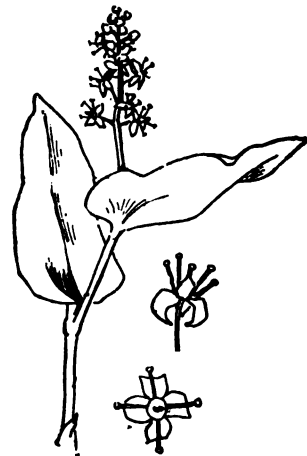
SOLOMON'S SEAL.—With nodding, greenish flowers, tube-shaped covering; stamens above the middle on very short filaments. The root-

stalk, as you have heard before, is marked with flat, round scars, showing just how many little sprouts have been sent up from it. These little scars were thought to look like seals; so

the plant was called the Solomon's Seal. Flowers axillary. Tubular perianth, six-lobed. Simple stems, leafy and above ground, oblong in shape. Fruit, a few-seeded berry.



SOLOMON'S SEAL.



FALSE SOLOMON'S SEAL.

SMILACINA (FALSE SOLOMON'S SEAL.)

Fruit, a few-seeded berry. Small flowers: Stems simple, above ground, leafy. Flowers in a terminal raceme, white; a six-parted perianth; one kind is four-parted and has narrow, spreading divisions; the stamens on its base. Slender filaments.

RACEMED SMILACINA.—These have fine down and grow from two to three feet high. They have many leaves which are lance-oblong and taper abruptly at both ends. They are fringed with hairs along the margin which is called ciliate. The flowers are many and grow in compound racemes. They are found in moist grounds.

STAR-FLOWERED SMILACINA.—These are nearly smooth and grow from one to two feet high. The leaves are many. They are lance-oblong and clasp tightly and are pale beneath.

The flowers are few and form a simple raceme. They are found in moist thickets.

THREE-LEAVED SMILACINA.—These are smooth and grow from three to six inches high. The leaves are commonly three. They are oblong and taper into a sheathing base, that is, they wrap around the stem like a sheath. The flowers are several and form a slender simple raceme. They are found in bogs.

TWO-LEAVED SMILACINA.—These grow from three to five inches high and are nearly smooth. They have two heart-shaped leaves, generally with the lower one petioled. The flowers grow in a simple short raceme. The perianth is four-parted and reflexed (turned backward or downward). They have four stamens. They are found in spring in moist woods.



LILY OF THE VALLEY.
1, plant; 2, section of flower; 3, fruit;
4 and 5, sections.

THE CHILD AND THE LILY.

Innocent child and snow-white flower !
Well are ye paired in your opening hour,
Thus should the pure and lovely meet,
Stainless with stainless, and sweet with sweet.

White as those leaves just blown apart,
Are the folds of thy own young heart ;
Guilty passion and cankering care
Never have left their traces there.

Artless one ! though thou gazest now
O'er the white blossoms with earnest brow,
Soon will it tire thy childish eye,
Fair as it is, thou wilt throw it by.

Throw it aside in thy weary hour,
Throw to the ground the fair white flower ;
Yet, as thy tender years depart,
Keep that white and innocent heart.

—BRYANT.

LILY OF THE VALLEY. — Everybody loves the sweet-smelling little bell-like flower. Its stems are leafless above the ground, for the big broad leaves all spring, with the flower stem, from beneath the ground. Fruit a few-

seeded berry. Small flowers, simple stems; flowers in a small, slender white raceme. A six-lobed, bell-shaped perianth. Smooth leaves.

LEGEND OF THE LILY OF THE VALLEY.

Leonard, a brave knight, was once wandering in the dark forests, when suddenly he was attacked by a terrible fire-drake. For three whole days he fought with his fierce enemy, and, brave knight that he was, came off at

length victorious. He was terribly wounded, though, and as he groped his way homeward, everywhere his blood stained the earth, lilies of the valley sprang up.

ONION.

The onion, a lily, too! Yes, with flowers in an umbel, coming out from a little scaly bract. Garlic, Leeks and Onions! All belonging to the Lily family. Well, the best of folks will sometimes have strange "relations."

Flowers in an umbel, with a scaly bract. Perianth wheel-shaped, or perhaps erect or bell-shaped. Flowers on a nearly naked stem, rising from a coated bulb. Round black seeds—not many in number. Fruit, a three-celled pod.

GARDEN ONION.—The scape is naked, much longer than the leaves. It is hollow and swollen in the middle. The flowers are whitish. The umbel often bears small bulbs called top-onions. The large bulb is turnip-shaped.

CHIVES ONION.—The scape is naked, and about as long as the slender leaves, and they all grow in tufts from a small bulb. The flowers are crowded and a purplish color.

FIELD GARLIC.—The leaves are thread-shaped, slender and round, but channelled on the upper side and hollow. The bulbs are small. The flowers form an umbel with a green-purple erect perianth or else only bulblets.

TRUE OR ENGLISH GARLIC.—The bulbs are clustered and compound. The leaves are lance-linear and nearly flat. The umbel bears pale, purple flowers with an erect perianth or else bulblets.

GARDEN LEEK.—This has one bulb. The leaves are linear, oblong and acute. They are somewhat folded or keeled, having a ridge on the under side. The flowers are crowded in the umbel. They have an erect perianth of a violet-purple.

WILD-LEEK.—The bulbs are clustered, narrow, oblong and pointed. The leaves are lance-oblong, blunt, flat and die off in midsummer. Then the naked scape appears with its loose umbel of white flowers. The pod is three-lobed. It is found in rich woods.

DAY-LILY.

Flowers open only for one day. No bulb, fibrous roots. Stem leafy towards the bottom. A few blossoms at the top. Stamens

all bent to one side. Long perianth, more or less inserted into a tube or cup. Fruit a three-celled pod. Leaves long and slender. Stamens on the narrow tube of the perianth. Seeds black.

There is the common yellow day-lily; the white, called Japonica; and also a bluish, bell-shaped kind, the leaves of which are more or less heart-shaped.



DAY-LILY.

COMMON DAY-LILY.—The flower is a dull orange-yellow. The inner divisions are many and blunt. Found in gardens.

YELLOW DAY-LILY.—The flower is a light yellow. The inner divisions of the perianth are acute. Found in gardens.

WHITE DAY-LILY.—The flower is white and funnel-shaped. The leaves are more or less heart-shaped. It is also found in gardens.

BLUE DAY-LILY.—The flower is blue or bluish, and the upper part is more bell-shaped than in the White Day-Lily. The leaves are scarcely heart-shaped. Is found in gardens.

TWO LITTLE ROSES.

One merry summer day
Two roses were at play;
All at once they took a notion
They would like to run away!
 Queer little roses;
 Funny little roses;
To want to run away!

They stole along my fence;
They clambered up my wall;
They climbed into my window
To make a morning call!
 Queer little roses;
 Funny little roses,
To make a morning call!

—JULIA P. BALLARD.



GARLIC.



BULB OF THE LILY.



ONION.

**TIGER LILY.****SQUILL.****WILD ORANGE LILY.**

LILY.

LILY.— Bell or funnel-shaped. Six separate petal-like divisions. Flat, pale seeds. Simple, unbranching herbs, coming up from a bulb.

Anthers fixed in the middle, like the top of a **T**. Stems leafy their whole distance.



LILY.

WHITE LILY.— The leaves are lance-shaped and scattered along the stem.

The flowers are erect. The perianth is bell-shaped, white and smooth inside.

BULB-BEARING LILY.— The leaves are lance-shaped, scattered along the tall stem, and produce bulblets in their axils.

The flowers are several and erect.

The perianth is open-bell-shaped. It is orange-yellow and rough inside.

WILD ORANGE LILY.— The stem is from one to three feet high. It has lance-linear shaped leaves scattered along it or they are sometimes whorled, that is, three or four or more leaves growing on the same joint around the stem. The flowers are from one to three, erect. They are open-bell-shaped and of a reddish-orange color. The six lance-shaped divisions are narrowed at the base into a claw and have purplish spots inside.

They are common in light or sandy soil.

WILD YELLOW LILY.— The stem is from two to four feet high, which bears distant whorls of lance-shaped leaves and a few nodding flowers on slender flower-stalks. The perianth is yellow or orange with brown spots inside. It is bell-shaped, with the divisions spreading or recurved (curved outward or downward) to the middle.

They are found in moist meadows and along streams.

SUPERB OR TURK'S-CAP LILY. The stem is from four to seven feet high with only the lower leaves in whorls. The flowers are many. They are bright orange or reddish with strong brown-purple spots inside. They are recurved and larger than the Wild Yellow Lily, but very much like it.

It is found in rich low grounds.

CLINTONIA.— The flowers are quite large, arranged in an umbel, and are greenish-yellow or greenish-white. The leaves are fringed on their edges like little eye-lashes.

SQUILL.— Flowers in a raceme, blue or purple, thread-like style.

Wheel-shaped perianth, erect, or bell-shaped, in six parts. Flowers on a scape. A few round, black seeds.

STAR OF BETHLEHEM.— Fruit a little three-celled pod, which splits up into three little valves when ripe. Perianth, or covering, wheel-shaped, and sometimes erect and bell-shaped.

Flowers in a corymb, on a nearly leafless stem, rising from a coated bulb. Small, round black seeds.

The very early artists used to be very fond of painting the Christ-flower in their pictures.



BULB OF THE HYACINTH.

HYACINTH.— Funnel-shaped or bell-shaped. Six stamens. Flowers in racemes. Narrow leaves, springing from a coated bulb. Fruit a three-celled pod, splitting into three parts when ripe.

GRAPE HYACINTH.—Very like the hyacinth, except that the perianth is globe-shaped, blue, and rather small.



HYACINTH.

LEGEND OF THE HYACINTH.

Ages and ages ago,
In the land we now call Greece,
Whose fabled gods and heroes,
To charm us will never cease,
There lived a youth, Apollo,
Whose name has been handed down,
For his fame of manly beauty,
And echoed the whole world round.
Nowhere throughout all Hellas,
For grace and beauty renowned,
In face, or form, or carriage,
Was his equal to be found.
Of those who had his favor,
Was one, a beautiful boy;
Long had he loved and taught him,
As part of his life, his joy;
So charmed with Hyacinthus
That many hours he'd spend,
After the usual lessons,
In frolic with his young friend.

Now, Zephyrus, the West Wind,
Jealous of Apollo's joy,
Angry to see him preferred,
For he also loved the boy,
Was ever planning revenge.

As he laid in wait, one day,
He saw his hated rival
Come out with the boy to play.
Apollo was throwing quoits,
With him a favorite game,
And so strong and sure his arm
All Hellas knew his fame.
Zephyrus thought a moment,
Then chuckled with evil joy,
"His hand shall send the weapon
That takes the life of the boy;
Surely, I waft the missile
To a mark he never guessed,
Then do you think it'll haunt me
How with joy his life is blest?"
Well was it for Zephyrus
That Nature his form concealed.
Ill would he fare with Apollo
Should his dark thoughts be revealed.
Then gently the west wind stole,

"Now, I'll watch my chance," thought he.
The boy, unmindful of aught,
Sprang forward in his glee,
Straight and sure as an arrow,
On its deadly errand it spun,
Apollo started aghast
At the deed his hand had done.
And then he clasped his darling,
And bathed the wound on his head,
And vainly sought to restore him,
But the boy was stricken dead.
Where the blood of Hyacinthus
Lay on the ground in a stain,
Sprang up a beautiful flower,
Which to this day bears his name.

—M. H.



YUCCA.

YUCCA.—Woody-stemmed. Palm-like, or not rising above the ground.
Grows from roots, not bulbs. Its leaves are evergreen. Little white tulip-shaped flowers, arranged in a panicle at the end.



CROWN IMPERIAL.

CROWN IMPERIAL.—O, such a proud-looking lily! It has its funnel or bell-shaped covering, its tall, unbranching stem, its scaly bulb, its swinging anthers. And unlike the Day-Lily it has little honey-bearing spots at the base of each division of its perianth or covering. These little honey-bearing spots look like little shining pearls.

TULIP.—Bell-shaped. Long leafless stem, the leaves all starting out from the ground as in the Lily of the Valley. Anthers erect on the filament. There is hardly any style, and three stigmas close to the long three-sided ovary.

The tulip is a Persian flower, and receives its name from thouban, the Persian for turban.

SAID TULIP, "THAT IS SO."

One Christmas time some roots and bulbs,
That lived far under ground,
Began to talk so softly that
Above was heard no sound.
Said Hyacinth, "It seems a shame
That we should have no share
In all the fun that's going on;
It really is not fair.
We hear the merry, jingling bells,
As sleighs fly o'er the snow,
But cannot see a single thing."
Said Tulip, "That is so."

Said Crocus, "I would like my dress
Of shining gold to don."
Said Scilla, "O, I wish I could

My bright blue gown put on."
"And much I long to join the dance,
For none can rival me.
In grace, the wind has oft declared,"
Said fair Anemone.
"And would," Narcissus said, "I might
My silver trumpet blow;
'Twould glad, I'm sure, the Christmas green,"
Said Tulip, "That is so."

Then spoke the Snowdrop, "Cease to wish,
For wishes are in vain;
Here must we stay until we're called
Above the ground again,
The blessing of a perfect rest
At Christmas time, is ours,
That we may gather strength to deck
The earth, in spring, with flowers.
So, sleep again, my sisters, dear,
Till it is time to grow,
And all your dreams shall pleasant be."
Said Tulip, "That is so."

—MADGE ELLIOT.

DOGTUOTH VIOLET.—Another bell-shaped flower, the parts of its covering spreading out broadly. It has a very long style, a round ovary, and its leaves are spotted. The yellow, most common kind, is sometimes called Adder's Tongue, because its leaves are said to be like an adder's tongue. Leaves oblong, or lance-shaped.



DOGTUOTH VIOLET.

YELLOW DOGTUOTH, OR ADDER'S-TONGUE.—The leaves are oblong-lance-shaped, pale, dotted and much blotched. The flower is a pale yellow. The style is club-shaped and stout. The stigmas unite. They flower in early spring and are found in moist ground.

WHITE DOGTOOTH VIOLET.—The flower is white or blueish. The style is less thick than in the Yellow Dogtooth.

They are rather common.

EUROPEAN DOGTOOTH VIOLET.—The leaves are ovate or oblong and a very little spotted.

The flowers are purple or rose-color. The style is thread-shaped and not thickened upwards. The stigmas are separate.

This kind is not common.

LITTLE WHITE LILY.

Little white Lily sat by a stone,
Drooping and waiting till the sun shone.
Little white Lily sunshine has fed,
Little white Lily is lifting her head.

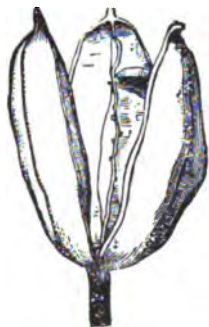
Little white Lily droopeth with pain,
Waiting and waiting for the wet rain;
Little white Lily holdeth her cup,
Rain is fast falling, and filling it up.

Little white Lily smells very sweet;
On her head sunshine; rain at her feet.
Thanks to the sunshine, thanks to the rain,
Little white Lily is happy again.

—GEO. McDONALD.

IRIS FAMILY.

These roots have perennial roots with root-stalks, bulbs or corms. The anthers turn out. The flowers are showy and usually open but for a day.



CAPSULE OF THE IRIS.

IRIS.—A six-cleft perianth, three spreading and curving downward, the other three smaller, erect, and of different shape. These have thick creeping foot-stalks. Stigmas look like little petals, one before each stamen.



PETALS AND SEPALS OF THE IRIS.



ROOT OF THE IRIS.

COMMON IRIS.—Has several flowers on one stem, light blue or purple. The stem is quite a little taller than the sword-shaped leaves.



IRIS.

DWARF GARDEN IRIS.—Have their flowers quite close to the ground, the stalk being very short. They flower very early in the spring. Three outer divisions recurved.

CRESTED DWARF IRIS.—Very low—having hardly any stems at all. The leaves, too, are short and the flowers a paler blue than the other varieties. Outer three divisions have a beardless crest. Rootstalks spreading on the ground.

BLUE FLAG.—Found only in wet places. They come early in the spring, their stems are stout, bearing upon them several purple, blue, or differently colored flowers, crestless and beardless, the inner divisions of which are much smaller than the outer. Sword-shaped leaves. One kind called the "Slender Blue Flag," is very like the common Blue Flag except that in every respect it is more delicate in structure, size and color.

LEGEND OF THE IRIS.

The flowers one day assembled to celebrate a festival of the Rain-bow. All came clothed in their wondrous beauty. But amidst them all the beautiful blue Iris shone the loveliest. No other one wore her rare jewels so gracefully. Her robe was deep blue like the twilight sky. And it was as softly shaded as the cloudlets.

Who was this fair stranger? No one knew. 'Twas strange, but no one could name this fair flower, so bright, so blue.

At last some sister flower cried, "See, see the rain-bow colors of her beautiful robe," Just then the rain began to fall, the rain-bow came out in all his glory, and sure enough, there were the rain-bow colors shining in the rain. "Iris! Iris! The rain-bow messenger!" cried the sister-flowers. "Let us call her Iris."

CALLING THEM UP.

"Shall I go and call them up,—
Snowdrop, daisy, buttercup?"

Lipsed the rain; "they've had a pleasant
winter's nap."

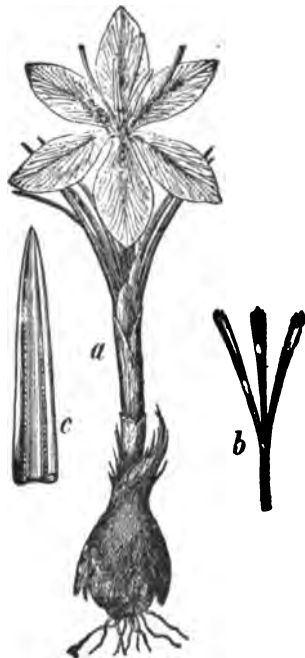
Lightly to their doors it crept,
Listened while they soundly slept;
Gently woke them with its rap-a-tap-a-tap!
Quickly woke them with its rap-a-tap-a-tap!

Soon their windows opened wide,—
Everything astir inside;
Shining heads came peeping out, in frill and
cap;

"It was kind of you, dear rain,"
Laughed they all "to come again;
We were waiting for your rap-a-tap-a-tap!
Only waiting for your rap-a-tap-a-tap!"

— GEORGE COOPER.

CROCUS.—Perianth rises with a slender tube from a corm or bulb. The four parts are equal, erect, and spread very little, looking on the whole like a rather closed flower. There are three thick stamens somewhat fringe-toothed. These brave little flowers come very early in the spring, sometimes even before the snow has gone.



CROCUS (*Crocus sativus*).

a, plant; b, stigma; c, part of a leaf.

BLUE-EYED GRASS.—Opens its little bright blue eye only for one day. It looks like a little blue star which must have fallen from the sky, and alighted on the very tip of a blade of grass. Since it is seen there but for one day, perhaps when night comes it goes back to its shining sister-stars. Filaments arranged in a tube, which sheaths itself about the style. Spread-shaped stigmas. Perianth six-parted, spreading widely. Small blue flowers. Simple stigmas. Stems are scapes, flat, sometimes two-winged. Narrow grass-like leaves.

TIGER FLOWER.—Large, orange-colored flowers, spotted with crimson or purple. "Freckle Lilies." Three of the divisions of the covering smaller than the other three. Stigmas two-cleft. Springs from a bulb. Leaves plaited. Filament like that of the Blue-eyed Grass.

BLACK-BERRY LILY.—Separate filaments. Flat stigmas. Six-parted coverings. Wheel-shaped, yellow with dark spots. Seeds remain after the pods drop off, looking black like a black-berry. Parts of the perianth are oblong, all alike, yellow, with darker spots. Sword-shaped leaves. Stems leafy below.

DAFFY-DOWN-DILLY.

Up through the mold
 So clinging and chilly.
 In a mantle of green
 Comes Daffy-down-dilly;
 In a mantle of green
 Which she hastes to unfold
 Till she stands like a queen
 In a garment of gold.

She doesn't wait
 For the mild, settled weather,
 She knows that the robins
 And bluebirds together
 And the song-sparrow sweet
 Are beginning to sing,
 "And besides," says dear Daffy,
 "I'm part of the spring."

"And if I should linger
 Too long and be late,
 The hyacinth, too,
 Might think she could wait.
 I must be in my place
 Although it is chilly.
 For the children expect me,"
 Says Daffy-down-dilly.

— ANNA M. PRATT in *Youth's Companion*.



GLADIOLUS.

GLADIOLUS.— Flowers grow on one side only, like a one-sided spike. Six-parted, three-arching to make an upper lip, the three lower more spreading; all colors. Stem rising from a corm.

AMARYLLIS FAMILY.

These are very like the Lily family in looks and in manners. First cousins, very likely. These plants are acrid and poisonous. The



AMARYLLIS.

six-cleft perianth clings below with the surface of the seed-cradle looking as if inserted on the summit. Six stamens. A three-celled pod. Herbs. Naked stems, long, slender leaves. A coated bulb; showy flowers.

AMARYLLIS.— This flower has no cup or crown on its perianth. The anthers are free and swinging, filaments are curved. Flowers large, rich, colored — usually red.



POET'S NARCISSUS.

NARCISSUS.— The stamens are included in a cup, and are of different lengths. Very short filaments. A scaly spathe about the flower, or just beneath it. The Jonquil and the Daffodil are both varieties of the Narcissus.

POET'S NARCISSUS — The scape is flattish, tall and mostly one-flowered. The flower is white, but the crown is yellow, very short and flat, and generally margined with crimson or pink. They are sweet-scented. The leaves are bluntly keeled, that is, they have a sort of rounded ridge on the under side. They also have a fine white powdery down on the under side. Found in gardens.

JONQUIL NARCISSUS — The flowers are from one to four on a round and slender scape. They are yellow, very fragrant, and the cup is saucer-shaped. The leaves are terete — that is, they are long and round like ordinary stems, but are channelled down one side. They are found in gardens.

POLYANTHUS NARCISSUS.— There are several flowers, on a flattish scape, or naked flower-stalk. They are white with a bell-shaped cup, and are not fragrant. The leaves are flat and have the white powdery matter on the under side. They are found in gardens.

DAFFODIL NARCISSUS.—This has one flower. It is large sulphur-yellow, with a deep yellow cup on a flattened scape or naked flower-stalk. It grows one foot high. The leaves are flattish.

This kind is found in all gardens. It is most common with flowers double, so that their structure is obscured.

NARCISSUS.

Where bright the river as silver
Narcissus mourned day after day
For his long-lost, well-loved twin sister,
Whom grim Death had taken away.

All lonely he sat by the stream side,
And seeing reflected so fair
His own face, he thought it the loved one's,
All smiling in loveliness there.

And seeing the beauteous reflection,
He fancied the bright lips could speak;
That the rare light shone in her blue eyes;
That the rose-tint mantled her cheek;

Thus silently sorrowing ever,
He pined in his grief and heart-strife,
Till the burden of woe o'erwhelmed him,
And sapped at the fount of his life.

Then Echo, the beautiful maiden,
Who loved him with tenderest heart,
Besought him to cease from his sorrow,
And wooed him with delicate art.

Thus spake she: "Narcissus, thou mournest,
For one who has vanished for aye;
Who never can feel thy fond presence;
Why linger here, day after day,

"Forgetful of one who is fonder,
And whose heart is truly thine own?"
Her words fell on ears all unheeding—
On heart cold as heart of a stone.

Narcissus still gazed on the water,
Still saw on its silvery tide
The face of his sister reflected,
And gazing and sorrowing — died.

Then Echo, the beautiful maiden,
Was never more heard to rejoice;
But pined she away in her sorrow,
Till nothing remained but her voice.

And over the grave of Narcissus
A beautiful flower sprang up,
With fair, slender leaves, bright and shining,
And odorous, white waxen cup.

Its fair blossoms drooped o'er the river,
Where so long he sat, and became
Memorial sweet; for all people
Called the strange, bright plant by his name.

Now, sometimes, at eve, o'er the river,
When white vapors rise like a wreath,
We say: "See! Narcissus returneth
O'er the Stygian river of Death."

And sometimes, through gathering shadows,
We hear a low moan, as of pain.
And say: "Listen! sweet Echo calleth
Her lover, Narcissus — in vain."

Yet pluck we the beautiful blossoms,
Whose delicate, odorous breath,
And white waxen cup tell the story
Of Narcissus — "True unto Death."

— DART FAIRTHORNE.

LEGEND OF NARCISSUS.

Another story of Narcissus is this: There was once a very beautiful-faced youth — with yellow flaxen hair, deep-blue eyes, and such a pure pink and white skin! Indeed, he must have been a most wholesome lad to look upon. But unfortunately he was most foolishly vain. It is said he would spend hours admiring his own reflection in a bright polished shield or in the clear waters.

One day as he was out hunting with his faithful serving-men, he came upon a very calm, clear lake in the heart of the forest.

At once Narcissus gave up the hunt, and sat down upon the bank to admire himself.

"Go away, my good men," said he, "and come back for me at nightfall. I wish to rest here by this beautiful lake."

The hunters went away, smiling among themselves at the boy's foolishness.

At night they came back for him, but, alas! he was nowhere to be found.

They searched the forest, and they peered into the lake, but no sign of Narcissus. Just then a beautiful flower, pure and white, with bright golden hair, sprang up before their eyes — on the very spot where Narcissus had been left.

"I am Narcissus," said the flower. Go

home and tell my father that for my foolish vanity I have been thus punished."

Of course there was great sorrowing throughout the kingdom, but Narcissus

never came back. And all his people could do was to be very careful of the flower and treat it with the greatest tenderness and respect.

PANCRATIUM.—A cup-shaped little blossom at the throat of a funnel-shaped covering. Long stamens, growing from the edges of a cup-shaped crown. Free-swinging anthers. White showy flowers in clusters.

TUBEROSE.—Flower without cup or crown on its perianth. Anthers erect on their filaments. Flowers in a spike, white and very fragrant.

SNOW-FLAKE.—No cups for the flowers. Anthers erect. Flowers coming out from a little spathe, white and nodding. The three outer parts of the perianth are larger than the inner three and taller, so seeming as a sort of protection for the little ones. The little parts of the perianth are often green-tipped.

SNOW-DROP.—No cup nor crown on the perianth. Flowers sometimes on an umbel, sometimes single.

The single flower comes out from a little one-leaved spathe, white and nodding. Three divisions of the perianth are shorter than the other three, and are notched. Long, pointed anthers.

The Snowdrop, Winter's timid child,
Awakes to life, bedewed with tears,
And flings around its fragrance mild;
And, where no rival flowerets bloom
Amidst the bare and chilling gloom,
A beauteous gem appears.



SNOWDROP.

STAR GRASS.—Few flowers. These have little bracts at the base. The star-shaped covering is yellow. The leaves look like blades of grass.

LEGEND OF THE SNOW-DROP.

After Adam and Eve had been sent out from the garden of Eden there were no flowers. The falling snow was covering all the beautiful green earth. An angel, pitying Eve, came down from Heaven to say a kind word and give the weeping woman hope and comfort. Just as the angel spoke, a snowflake fell upon his hand.

"See, Eve," said the angel; this little snowflake shall take a flower form before thine eyes. And it shall bud and blossom

for thee." Then the little snowflake fell from the angel's hand; and as it fell, it turned indeed to a beautiful flower.

Eve dried her tears, and bowed her head for joy. For the angel said to her:

"Take heart, dear Eve; let this give you hope. Let it be to you a sign that by and by summer will come again."

Then the angel went away; but all around where he had stood, there sprang up a ring of beautiful snow-drops.

ORCHID FAMILY.

The plants are so irregular and so strange-shaped, one would hardly know how to describe them. They obey no laws and each seems to be a law unto himself. The orchids are, I fancy, the "geniuses" of the flower-world.



LADY'S SLIPPER.

LADY'S SLIPPER.—This is the most common orchid you are likely to come across unless you visit some hot-house where the gardener cultivates them for their rarity.

In this flower, the whole of the part you call the slipper, is just one of the petals. Can you find the other petals?

ARETHUSA.—This sweet-smelling Orchid is named Arethusa—from the beautiful nymph



ARETHUSA.

of long ago who was changed by the goddess Diana into a fountain. It has an irregular six-parted corolla. The lower petal is bent down and is thickly bearded inside. The stem is about ten inches high, and has three sharp sheaths. The flower grows at the very top of the stem, and there are two little bracts at the base. A bulbous root.



ORCHIDS.



TWIST FLOWER (*Ladies' Tresses*).

ORCHID FAMILY.

THE RUSH, THE SEDGE, AND THE GRASS FAMILIES.

To these families belong the wood-rushes, the bull-rushes, wheat, barley, rye, Indian corn, sugar cane, and many other such plants. You would hardly care to study them very much now, I think, so let us pass on to the families of the Exogens

ers for all their pretty heads nod and wave so gracefully in the breezes. Isn't it fortunate they are so sweet-tempered, and willing to nod and bow at each other summer after summer with hardly a word of encouragement from all the world?

I suspect the truth is that both the flowers and grasses live in a world all of their own, and could get along without us a great deal better than we could without them.



BRANCHING RACEME OF THE OAT.

Notice this summer how many kinds of grasses there are in the fields. You will be surprised at the number you will find, and will wonder that you never noticed them before. I am afraid we do not give the attention to the pretty grasses that we do to the gay flow-



CORN.

"And he gave it for his opinion that whoever would make two ears of corn or two blades of grass to grow upon a spot of ground where only one grew before, would deserve better of mankind and do more essential service to his country than the whole race of politicians put together."

—SWIFT.



ENGLISH EYE GRASS.



ORCHARD GRASS.



MEADOW FESCUE.



RED TOP.



TIMOTHY.



VERNAL.

GRASSES.

EXOGENS.

APETALOUS.

BIRTHWORT FAMILY.

These are herbs or twining vines. They have large flowers and the tube of the three-lobed calyx is fastened to the six-seeded ovary.

Leaves are rather kidney or heart-shaped, and either have long foot-stalks or grow from the root-stock.

WILD GINGER.—No stems. A pair of leaves with a little petalless flower, growing close down to the *ginger-tasting root*. Short, three-lobed calyx. Twelve stamens, united at the base with the style.

Nothing in plant-lore is more interesting than the odd names. And when you come to remember that most of them were given years and years ago, when people were very simple and childlike, you will understand why so many of them are names just from some common object which in these people's eyes they seemed to resemble. So it is you will hear as you go on of all sorts of odd names like Cat-tail, Lady's Slipper, Dutchman's Pipe, Catkins, Crane's Bill, etc.

BIRTHWORT.—Twining shrubs or low herbs. A crooked, tube-shaped calyx with a three-lobed spreading border. Six stamens, outside the stigma—all close-sitting.

Fruit, a six-parted pod with many flat seeds.



DUTCHMAN'S PIPE.

SNAKE-ROOT.—So called because the flowers are twisted, snake-like in shape. Otherwise like Birthwort.

PIPE-VINE.—So called because its long flowers are shaped like a Dutch pipe. Found in the Alleghanies.

It is a tall, woody climber with heart-shaped leaves.

FOUR O'CLOCK FAMILY.

FOUR O'CLOCK.—Its large funnel-shaped calyx looks like the corolla of a Morning-Glory. Leaves opposite, heart shaped, long-stalked. Doesn't open until towards the last part of the afternoon. Five stamens, one style.



FOUR O'CLOCK.

AMARANTH FAMILY.

These herbs are very like those of the Goosefoot Family except that the flowers have little scale-like, thin bracts. They are often highly colored, making showy clusters or bunches, which hold their form and coloring and do not wither after blossoming. They have a pod with a lid.

AMARANTH.—Prince's Feather, Love-lies-bleeding and Cockscomb are the garden varieties of the Amaranth you are most likely to be interested in at present.

These have their flowers in spikes or paniced clusters, and the fruit pod opens with a lid.

GLOBE AMARANTH.—This has its flowers in a head. They are tube-shaped, the filaments are three-parted, the middle part bearing the anther.

POKE-WEED FAMILY.

POKE WEED.—Sepals five, round, hollow, white, looking like petals. Ten stamens under the ovary. Ovary made up of ten small, one-seeded ovaries united into one. Fruit a dark crimson ten-seeded berry. A coarse rank-growing herb, with a bitter poisonous root, pithy stem, alternate leaves, flowers in racemes. A common flowering plant, growing in rich, low soil. In the fall it presents an abundance of berries.



POKEWEED.

BUCKWHEAT FAMILY.

These herbs have whole leaves which are alternate. Calyx is made up of from four to six sepals, sometimes separate, sometimes united at the base.

There are from three to nine stamens, and these are inserted on the base of the calyx. Ovary one-celled.

This family may always be known by the *stipules which form a sheath above each joint*. The juice is sour or bitter.

DOCK.—Calyx has six sepals, and the flowers are perfect, though some have only pistils, while the others have stamens. The leaves are coarse and bitter.



DOCK.

BUCKWHEAT.—Calyx of five nearly similar sepals. Stamens eight, a triangular akene, shaped like a beech-nut. Cotyledons very large. Flowers white and in a corymb.

RHUBARB.—A sour, juicy plant. Enormous, coarse-grained leaves. Calyx has six sepals, which are white. Stamens, nine. Styles, three.

SORREL.—Calyx of six sepals. The three outer ones spreading, the inner one folding over the triangular akene. Sour-tasting, ear-shaped leaves.

KNOTWEED.—The commonest weed in yards and waste places. Smartweed and Water Pepper belong to the Knotweed variety.

COMMON KNOTWEED, KNOTGRASS, OR GOOSEGRASS.—They are small and spread on the ground. The leaves are sessile, lance-shaped or oblong, and pale. There is a variety that has nearly upright stems and oblong or oval leaves.

They are the commonest weeds in yards and waste places.

SLENDER KNOTWEED.—They are upright and somewhat branched. The leaves are linear and acute. They wrap around the stem like a sheath and are fringed. They grow in dry soil.

ORIENTAL KNOTWEED OR PRINCE'S FEATHER.—They are tall and last but one year. They grow from four to seven feet tall. The leaves are ovate. The spikes are rose-colored flowers long and nodding. They have seven stamens. The seed-like fruit is flattish.

WATER KNOTWEED.—The stems float in water or root in mud. The leaves are lance-shaped or oblong. The spike is thick and short. The flower is rose-red. It has two styles and five stamens.

PENNSYLVANIA KNOTWEED.—The stem is upright and grows from one to three feet high. The leaves are lance-shaped. The spike is oblong, thick and erect. Its peduncle (or flower-stalk) is beset with club-shaped bristles or glands. The flowers are rose-colored and have eight stamens. It has a flat akene or seed-like fruit.

They are found in moist ground.

LADY'S THUMB KNOTWEED.—The stems are like those of the Pennsylvania knotweed, but they have no bristles on the flower-stalk. The leaves have a darker spot on the upper side. The spike is short and thick and erect. The flowers are greenish-purple and have six stamens. They grow common in waste land.

SMARTWEED OR WATER-PEPPER KNOTWEED.—They are upright and grow from one to two feet high. They are very acrid and biting to the taste. The leaves are marked with fine transparent dots and so are the greenish sepals. The spikes are short, but loose and drooping. The seed-like fruit is flattish or bluntly triangular. They are found in moist ground, in yards and near dwellings.

WILD SMARTWEED KNOTWEED.—They grow from a perennial root, upright and from one to two feet high. They are very acrid and biting like the Water-Pepper and the leaves are dotted. The spikes are whitish or flesh-color, very slender and erect. There are eight stamens and three styles. The akene or seed-like fruit is in a sharp triangular form.

MILD WATER-PEPPER KNOTWEED.—They grow from one to three feet high and upright, but often creeping at the base and rooting in water. The leaves are roughish and not biting. They are narrowly lance-shaped. The spikes are slender, erect, and rose-color. The style is three-cleft at the top. They have eight stamens. The seed-like fruit is sharply triangular. They grow in shallow water.

VIRGINIA KNOTWEED.—The stem grows from two to four feet high and is angled. The leaves are large, ovate or lance-ovate and have taper points. The flowers are scattered in a long and naked slender spike. The calyx is four-parted and greenish. The stamens are fine. The styles are two and are bent down in the fruit.

ARROW-LEAVED KNOTWEED.—The leaves are arrow-shaped and are on a short stalk. The seed-like fruit is three-angled.

HALBERD-LEAVED KNOTWEED.—The leaves are halberd-shaped and have long stalks. The seed-like fruit is flattish. They grow in low grounds.

CLIMBING KNOTWEED.—They are smooth and climb high over shrubs. The racemes are leafy. Three of the calyx-lobes are more or less winged in the fruit. They grow in thickets in low ground.

BINDWEED KNOTWEED.—They are low and the stems are roughish. The racemes are corymbed. Three of the calyx-lobes are ridged in the middle. They grow in waste land.

LAUREL FAMILY.

Belongs in hot climates but we have a few of its members here in the Sassafras, Spicebush, and Redbay.

In the Sassafras the flowers are in stalked corymbs, and they come with the leaves.

In the Spicebush the flowers are in sessile clusters and they appear before the leaves are entire.

All these have spicy bark and leaves. The leaves have tiny spots which can be seen readily under the microscope. The stamens grow deeper down in the calyx, and the anthers open by valves. They have a one-seeded berry.

REDBAY.—Perfect flowers, nine stamens, with pollen-bearing anthers, and three non-pollen bearing anthers. Found in the Southern States.

SASSAFRAS.—Greenish-yellow flowers. There are nine stamens, three of them with little yellow glands at the base of the filaments.

The anthers have four odd little valves and four-celled. Flowers grow in corymbs and come with the leaves. Grows to the size of a tree.

SPICEBUSH.—Similar flowers, but the anthers are two-celled and each has one valve. It is a shrub. The flowers grow in close sitting clusters and they come out even earlier than leaves.



ORIENTAL KNOTWEED (*Buckwheat Family.*)



SMARTWEED (*Buckwheat Family.*)



SASSAFRAS (*Laurel Family.*)

GOOSEFOOT FAMILY.

This family has no beauty to boast, that is sure. Perhaps, however, it may be very good. We are often told, you know, that "handsome is that handsome does."

The flowers are but small and greenish. The leaves are alternate, without stipules.

Many of these, called Pigweeds, grow in waste ground, and would, I am sure, be of very little interest to a young botanist. However, here are descriptions of a few of them.

SAMPHIRE.—They are leafless fleshy herbs with perfect flowers in fleshy spikes, that is, a lengthened flower-cluster with either very small or no peduncle or footstalk. They are found in salt marshes.

BLITE.—They are leafy herbs with broadish leaves. They are generally tender leaves and not prickly. The calyx is wingless. The flowers are perfect and in clusters or spiked heads. The calyx becomes a sort of berry, and forms a strawberry-like red, pulpy fruit.

BEET.—It is a leafy herb with broad and generally tender leaves and not prickly. The calyx is wingless. The flowers are in small sessile clusters collected in a spike (long flower-cluster)

or a panicle (irregularly, branching, compound flower-cluster) The calyx is dry and herbaceous. The akene (seed-like fruit) is thick and hard, and adheres to the calyx below. The leaves are smooth.

GOOSEFOOT.—This is a leafy herb with tender, broadish leaves, not prickly. The calyx is wingless.

The seed-like fruit or akene is very thin and breaks away from the seed. The leaves are often mealy. It is often called the Pigweed.

ORACHE.—This is a leafy herb with broadish, tender leaves like to Goosefoot and Beet.

The flowers are monœcious, that is, two kinds borne on the same plant. The fertile ones are single in the axil of the leaves.

SPINACH.—This is also a leafy herb.

The flowers are diœcious, that is, some have all stamens, and others all pistils. They grow in spiked clusters, with the calyx over the fruit with two or four horns.

The leaves are arrow-shaped.

SALTWORT.—The leaves are awl-shaped and have prickly tips. The calyx is winged in fruit. It is a leafy plant with many branches. It grows on the sea-shore.

MEZEREUM FAMILY.

Shrubs with tough, bitter bark. Flowers come before the leaves. Calyx tubular and highly colored.

DAPHNE.—Wild; a hardy, low shrub; flowers appear before the leaves. Calyx funnel-shaped,

generally rose-colored, the border four-lobed. Eight stamens in two sets. Very few filaments.

LEATHERWOOD.—Calyx tubular, pale, yellow, with no spreading border. Eight stamens with long, protruding filaments.

Margin toothed, but not at all clearly.



THE CHINESE LEGEND OF THE NARCISSUS.

In far-off regions of Cathay,
An aged father, dying, lay.
On either side, a son,
Who for their sinking father wept —
Their mother for long years had slept —
While moons their course had run.

The father raised his palsied hands;
To his first-born he gave his lands,
All his possessions great,
Except one acre, poor and bare,
The younger son, he gave, as share
Of his immense estate.

After the last sad rites were paid,
The elder son made haste and laid
Rich feasts for all his friends;
Banquets he gave — made gorgeous show;
His wealth, quick-gained, was quick to go;
Who earns not soonest spends.

The younger son mocked on each hand
Became a wand'rer in the land,
His life robbed of its zest;
At length, way-worn, he reached a nook,
Beside a rippling, babbling brook,
And laid him down to rest.

And in his dreams, a spirit bright,
A water-nymph, in robes of white
Beside him, softly said:
"Take of the plants which bloom so fair
Around about you, everywhere,
To your own native glade.

"Plant them, attend them, love them well;
There shall be wrought a magic spell
If you them safely guard.
Who works, and waits, and watches, may
A glorious harvest see some day,
And reap a rich reward."

Surprised, he woke and looked around,
The nymph was nowhere to be found;
The mist above the stream,
Disporting in the sunlight gay,
Reflected light and rainbow ray,
The "nalah" of his dream.

With careless laugh, he started on;
But, ere he many roods had gone,
Dream-haunted, turned him back,
And spent the day in gathering there
Bulbs from the flowers that bloomed so fair,
Until he felt no lack.

Then sought his home; with care and toil
Placed them in his unfruitful soil,
And screened them from the sun.

He watered, watched, and nursed them well
Forgetting quite the "magic spell,"
So much of love they won.

Their tender shoots and blades of green,
Up-springing the bare rocks between,
So wrought upon his heart
That soon, these children of the air,
The offspring of his love and care,
Seemed of his life a part.

And so, when dawned the New Year's day,
The people came from far away
To see a dazzling sight.
What was before a barren knoll
Is decked — so swift the seasons roll —
With blossoms waxen white.

So to the poor he gave away,
Till not a soul in all Cathay
But owned a wondrous flower.
The rich, the poor, the young, the old,
Drank nectar from the cups of gold,
No matter what their dower.

Time passed; ere many moons had waned,
The elder lost, the younger gained,
All the possessions late
Which seemed at first so rich a prize,
When looked upon with wistful eyes,
Their father's large estate.

All from the care of bootless flowers.
Which waste their lives at morning hours,
Had these vast riches grown.
While fertile fields had laid a waste,
Rich harvests, green and golden, graced
A barren heap of stone.

And though decades have gone for aye,
When dawns the Chinese New Year's Day,
In ev'ry humble room,
In palace and pagoda fair,
You'll see in every window there
The sweet Narcissus bloom.

And to the little ones they tell
The story of the magic spell,
And teach them "well to guard
The little that they have, that more
Be added to their meagre store;
For work reaps its reward."

Thus do they speak in far Cathay;
Upon the happy New Year's Day;
And then, through all the land,
An emblem of his thrift and care,
Each citizen is seen to bear
The "Lily" in his hand.

— DART FAIRTHORNE.

NETTLE FAMILY.

This family has many members, so many that they divide themselves into sub-families. The Elm and the Hackberry set off by themselves; the Fig, the Mulberry and the Osage-Orange by themselves; and the Nettle, the False Nettle, the Wood Nettle, and the Clearwood by themselves; and the Hop and the Hemp by themselves.

Some plants have pistillate, others staminate flowers, some both. Shrub, herb or tree. Stipules. Free calyx. One-seeded seed cradle.

ELM.

ELM.—Trees. Alternate simple leaves; flowers sometimes perfect, sometimes not. Two long styles or two long stigmas. Two-celled ovary, a *hanging ovule* in each cell. Four to nine stamens. Flowers come before the leaves. Fruit is a thin key, winged on all sides, one seed in the end.

HACKBERRY.—A one-celled seed cradle; one hanging ovule; stamens five or six. A small, berry-like fruit. Leaves heart-shaped.

BREAD FRUIT.

Trees with milky or colored juice. Leaves alternate; flowers in heads or catkin-like spikes. One or two styles. Inner back peculiarly tough and fibrous.

Flowers, some staminate, some pistillate. Fruit pulpy when ripe.

MULBERRY.—Staminate flowers in one kind of catkin, pistillate in another. The fruit from the fertile flowers eatable; a berry-like bunch of fruit. Four stamens. Two styles.

PAPER MULBERRY.—The fertile flowers in a close, round head. Fruit fleshy. Four stamens. One style. Sterile flowers in spikes. Leaves heart-shaped. Rough on one side, downy beneath, some of them palmately lobed.

OSAGE-ORANGE — Fertile flowers also in heads; sterile flowers in racemes. Leaves oblong, smooth above, entire; little branchlets with spines.

NETTLE.

Herbs. Opposite or alternate leaves; tough, fibrous bark. Juice colorless. Flowers in spikes, racemes, *not* in catkins. Stamens same number as sepals. One-celled ovary. One stigma. One style. An akene in fruit.

NETTLE. — Plant covered with bristles. Opposite leaves; four sepals. Stigma a little feathery tuft.

WOOD NETTLE. — Bristly. Alternate leaves. Five sepals in the sterile flowers; four or two in the fertile flowers. Stigma is awl-shaped.

FALSE NETTLE.—No "stings." Smooth, sometimes hairy. Alternate leaves. Fertile flowers have a cup-shaped calyx with a narrow mouth. Inside the calyx is the seed-cradle. A long, thready stigma. Flowers, clusters in spikes.

CLEARWOOD. — This has no "stings" but is very smooth. Opposite leaves. Three or four sepals. A tuft-like stigma.

PELLITORY. — No "stings." Smooth or hairy. Stigma a tuft. Flowers in axillary clusters with leafy bracts.

HEMP.

Herbs. Some flowers with pistils, others with stamens. Colorless juice. Tough bark. Leaves palmately lobed, that is, hand-shaped. Alternate, rough leaves. The sterile flowers are in racemes or panicles with five sepals and five stamens. The fertile flowers are crowded, have only one sepal, within which is the seed cradle. Two long stigmas.

HEMP.—Erect herb. Leaves of five or seven leaflets. Drooping stamens. Spiked clusters of fertile flowers with bract.

HOP. — Twining herb. Heart-shaped leaves. Fertile flowers in little scaly catkins with broad, thin bracts, making a little cone for the fruit.



STINGING NETTLE (*Urtica dioica*.)
a, plant with anthers; b, plant with stamens; c, pistil, d, seed;
e, ovary.



HOPS (*Humulus Lupulus*.)
a, plant; b, twig; c, fruit; d, anthers; e, f, stamens; g, h,
nuts.



COMMON HEMP (*Cannabis sativa*.)
1, flowery branch; 2, leafy branch; 3, flower cluster; 4, capsule; 5, berry.

NETTLE FAMILY.

DRAWINGS.

PLANE-TREE FAMILY.

Only one member! It is called the American Plane-tree, or the Sycamore, or the Buttonwood tree! Making up in name, you see, for what it lacks in sisters and brothers. It is a well-known tree, growing on the river-banks. The leaves are alternate, palmate, and have sheathing stipules.

WALNUT FAMILY.

Has alternate, pinnate leaves. You know more about their fruit, I suspect, than you know of the trees. There are the Black Walnut, the Butternut and the English Walnut—all old friends to you, no doubt. The Shagbark, the Mockernut, the Pignut, the Bitternut, and the Pecan—all fruits of the Hickory trees—belong also to the Walnut Family.

Old legends tell us that Walnut trees could never be struck by the angry bolts of Jove—that is, the lightning.

OAK FAMILY.

If you would press a leaf of every kind of tree you see, beginning in the early spring, you have no idea how much pleasure you would find through the summer in being able say, "That is a Beech! That is an Oak! That is a Red Maple! That a White Maple!"

To the Oak Family belong the Oak, the Chestnut, the Beech, the Hazel, the Horn-beam, and the Hop Horn-beam.

And such a number of kinds of Oak trees! There are the White Oak, the Post Oak, the Swamp Oak, the Live Oak, the Willow Oak, the Laurel Oak, the Water Oak, the Scrub Oak, the Red Oak, the Scarlet Oak—and ever so many more. Doesn't it seem a shame that with all these trees about us, we know so little of them. I wonder if the Boston boys half of them know about the trees on Boston Common. Some people like to laugh at Boston Common just because it is merely one level sweep of green, velvety grass. But

those who laugh at it, are not versed in tree lore, I am sure. If they would take the pains to read the labels that have been fastened to every tree, they would not laugh at our Common quite so freely.



OAK LEAVES.

The Oak tree was especially revered in olden times. One nation had a law severely punishing anyone who should dare cut down an oak. The great holes in the bark were considered by the Germans as the pathways for fairies. In all countries it was looked upon as the tree of the gods and a great protection to have one near one's home.



CATKIN OF THE OAK.

BIRCH FAMILY.

The family includes the White Birch, the Paper Birch, the River Birch, the Sweet Birch, and the Alder.

There is a dwarf-birch which in the Swedish legend has a most unfortunate curse upon it. It was this tree that afforded the rod with which Christ was scourged. For a punishment it was never allowed again to grow tall.



BRANCH OF ALDER.



INSERTION OF LEAVES OF ALDER.

SWEET GALE FAMILY.

Low shrubs. Fragrant foliage. Catkins with one little blossom under each scale. Ovary forms one little nut or berry.

SWEET FERN.—Little round bur-like catkins. Fruit a small, smooth nut. Leaves lance-shaped, long and ragged-edged, like a fern.



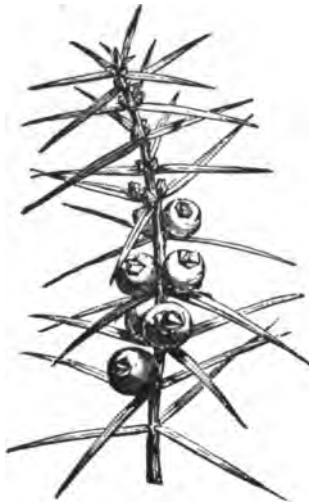
SWEET FERN.



BAYBERRY.

SWEET GALE. — A little shrub, with little round fruits so crusted over with a pitchy or waxy substance that they seem like drupes. Leaves entire or have serrated edges.

BAYBERRY. — On the sea-coast, lance-shaped, sweet-smelling, shining leaves, and a waxy fruit. Another kind found in wet places, with wedge-shaped leaves and waxy fruit.



JUNIPER.

PINE FAMILY.

To this belong the Pines, the Cypress, the Yew, the Larch, the Fir or Spruce, and the Juniper.



CYPRESS (*Cupressus Sempervirens*).
a, twig; b, c, portion of blossom; d, fruit; e, cone.

COMMON JUNIPER.— Spreadly shrub. Leaves in whorls of three; sharp-pointed, awl-shaped leaves, which are green on one side, white on the other. Dark purple berries.

RED CEDAR.— Shrub or tree. Leaves, small, crowded, awl-shaped and loose on the live branches; while on others the leaves are apt to be smaller, scale-like, closely overlying each other in four ranks. Berries purplish, with a whitish look. Red wood.

PINE NEEDLE.

“If mother Nature patches the leaves of trees and vines.

I'm sure she does her darning with the needles of the pines.

They are so long and slender, and somewhere in full view,

She has her threads of cobweb, and a thimble made of dew.”

THE LEGEND OF THE ASPEN TREE.

There are stories enough, beautiful little stories, too, about the trees to fill a whole book and to enable you to entertain your friends in the woods a whole day.

The Ash tree, as well as certain other trees, was believed to be weather-wise. You people say now, “See the leaves of the Poplar turning their silver side up. It must be going to rain.” The Bay tree was supposed to be a protection from lightning. The Cashew tree was said to supply the crown of thorns; the Cedar the wood for the cross. The Cherry tree was sacred to the Virgin Mary. Judas was said to have hanged himself on the Elder. The Willow was an emblem of sadness, and a branch of the Yew tree was worn by rejected lovers.

But what about the Aspen tree. There is a German legend that tells us that when Joseph and Mary were fleeing with the infant Jesus, they came into a very dense forest. As soon as they were beneath the shelter of the forest, the trees all bowed their heads in reverence to the Christ-child. All except the Aspen, that lifted its head only a little

higher, refusing to pay homage to anything on earth.

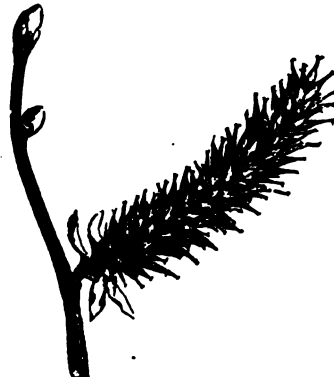
Then Christ cast one sad reproachful look upon this tree, so full of sorrow and reproof, that it pierced straight to its very heart. And lo! it began to tremble and has never for one moment ceased in all these centuries.

WILLOW FAMILY.

To this belong the Willows and the Poplars.



CATKINS OF WILLOW.



CATKINS OF WILLOW.

MISS WILLOW.

A Lady so fine came out of the woods,
All dressed in silvery gray,
Whether satin or velvet or soft woollen goods,
I'm sur I'm not able to say.

While great drifts were piled in hedgerow and plain,
While fiercely the March winds did blow,
And wildly the tempest in mockery raged,
This lady stepped out in the snow.

I asked a young ash which grew by the wall,
To tell me the fine lady's name.

"Oh yes," he made answer, "No trouble at all,
She has a most enviable fame.

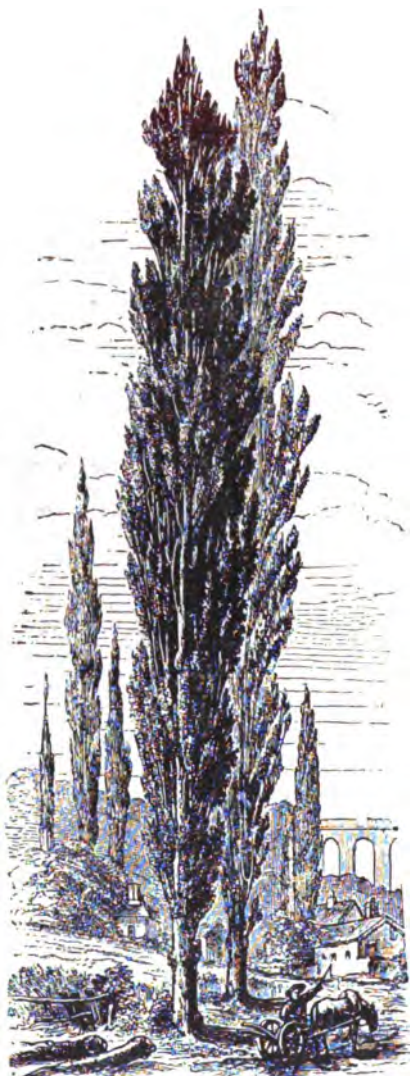
So modest is she, so dainty and sweet,
Most dearly I love her, 'tis true,
But if no objection the young lady brings
I'll make her acquainted with you."

"Miss Willow, my friend, Mr. Love-Nature here,
Your friendship has gallantly sought,"
Then in a low whisper he laughingly said,
"We call her Miss Pussy for short."

— SUSIE E. KENNEDY.

LOMBARDY POPLARS.

Do you know how oddly the boughs of the Lombardy Poplar grow? Straight up in the air: making the tree look, as some one has said, for aⁿ the world like an umbrella turned



LOMBARDY POPLAR.

inside out by the gale. Of course in the Legend world there must be a reason for this.

Here it is. Some one had stolen the pot of gold which is said to be at the end of the rainbow.

The Wind messengers were sent to search for it. The Elm, the Oak, the Pine, all the trees had been asked if they knew the thief. All pointed their leaves toward the Poplar saying, "The Poplar knows! the Poplar knows!"

"I know?" said the Poplar, raising its branches in pretended surprise. "Why how should I know!"

But just then the pot of gold was seen shining through the leaves. The Wind messengers at once seized upon the gold, and as a punishment the Poplar was doomed to forever hold its arms in just that position, for a warning to all other trees to be honest.

It seems rather a pity to tell such a story of so beautiful a tree. But it doesn't hurt the tree after all; and as nobody believes it, no harm is done, and we are amused for the time by the story. Stories told of us, if they are not true do us little harm; for like spatters of mud, they will come off when they're dry.

THE VERNAL SHOWER.

Now the lucid tears of May
Gem the blossoms of the spray;
Every leaf and bending flower
Glitters in the vernal shower.

Lovelv in the clouded sky
See, the Rainbow shines on high;
Mark the heavenly colors bright
Ere they vanish from the sight.

Fairer now the view around;
Brighter verdure decks the ground;
Flora, smiling in her bower,
Hails the tender vernal shower.

Cool and fragrant is the gale,
Breathing sweets from yonder vale;
Where the flowers in freshened pride
Smile upon the fountain side.

See! again the skies appear
Clad in blue, serenely clear:
Mild and genial is the hour;
Sweet the balmy vernal shower.

— MRS. HEMANS.

MONOPETALOUS.

HONEYSUCKLE FAMILY.

These are shrubs or woody-stemmed twiners. They have a one-parted or entire corolla bearing four or five stamens. Their leaves are opposite and have no stipules.

TWIN-FLOWER.—Creeping herb. The flower-stalk forks, and bears two sweet-smelling, drooping flowers. The Corolla is hairy inside, has only four stamens. Color generally purple.

SNOW-BERRY.—Shrub. One slender style. One stigma, short, bell-shaped corolla and a two-seeded berry.

ELDER.—Shrub. Three stigmas. Short, open, five-parted, regular corolla; flowers small, white, very many in compound cymes. Leaves pinnate. Three-sided berry.



VIBURNUM.

VIBURNUM.—Shrubs or woody vines. Simple leaves. Berry with one flat stone. The cultivated snowball is a viburnum.

HONEYSUCKLE.—Shrub or woody climber. Stamens as many as there are lobes to the corolla. One slender style. A long irregular corolla. Many seed in the berry.

HONEYSUCKLE.

Teeth of the calyx of all honeysuckles are short. The corollas are tubular below and two-lipped, one

lip having four lobes, the other one lobe, except in the Trumpet-Honeysuckle.

Flowers are in bunches at the ends of the branches; or, in some varieties, close sitting in the uppermost leaves.

TRUMPET HONEYSUCKLE.—The uppermost leaves are joined. Red corolla, no odor. Long, narrow, regular corolla, lobed at the edges.



TRUMPET HONEYSUCKLE.

SWEET HONEYSUCKLE.—Small flowers. Powdery leaves. Blush-colored, very sweet odor, yellow berries.

ITALIAN HONEYSUCKLE.—Powdery leaves. Flowers larger than in the Sweet Honeysuckle. Otherwise very like it. Berries yellow.



1. FLY HONEYSUCKLE. 2. SMALL-FLOWERED HONEYSUCKLE.

WOODBINE HONEYSUCKLE.—Leaves *all separate*. Large, purple, sweet-smelling flowers, beautiful red berries.

SMALL-FLOWER HONEYSUCKLE.—The leaves are glaucous, that is, they have a fine, white powder on the under side. The flowers are small and either yellowish and purple or crimson.

HAIRY HONEYSUCKLE.—The leaves are of a dull green color, hairy, and are not glaucous. Flowers are clammy and are orange color.

JAPAN HONEYSUCKLE.—They are slender and hairy. The corolla is deeply two-lipped. It is reddish outside and white inside and sweet.

TARTARIAN HONEYSUCKLE.—They are smooth. The leaves are rather heart-shaped. The flowers are rose-color and handsome. Blossoms in the spring.

FLY HONEYSUCKLE.—The leaves are petioled. They are ovate or heart-shaped but thin, and are a little hairy below and on the margins. The corolla is nearly equally five-lobed and of a greenish-yellow color. The ovaries are separate. It grows in the woods.

SWAMP FLY HONEYSUCKLE.—The leaves are oblong sessile. The flower-stalks are long. The corolla is deeply two-lipped and of a whitish color. It grows in swamps.

BUSH HONEYSUCKLE.—Several-seeded berry. Irregular, long corolla. One style, one stigma, woody vine. Four or five stamens.

WILD YELLOW HONEYSUCKLE.—Thick leaves; powdery both sides of leaves, several pairs united. Pale yellow flowers; long tubes.

GRANDMOTHER'S GARDEN.

Stately and prim grew the hollyhocks tall
In grandmother's garden against the wall;
Fairest of flower-duennas were they,
Keeping good watch through the long summer day,

Close by was the sunshiny corner where
The foxgloves swayed in the balmy air,
And nodded across to the larkspurs blue
And the pleasant nook where the columbines grew,
There were cinnamon roses, and, low at their feet,
The shadowy cluster of day-lilies sweet,
And mignonette modest, and pensive heart's-ease,
And boy's love, and candytuft, sweet in the breeze.

And, first every morn by the sun to be kissed,
Grew, all in a tangle, fair love-in-a-mist,
With bachelor's buttons and sweet-williams gay,
And spice-pinks for neighbors, just over the way.
There were sweet-peas coquettish, most festive of flowers,

And four-o'clocks sturdy to mark off the hours,
And frail morning-glories that laughed in the light

At the phlox and verbenas, pink, purple and white,
Ah! the days were so bright, and so sweet was the air,
And in Grandmother's garden all life looked so fair!

—DOROTHY GREY.

ELDER (*Sambucus nigra*.)

a, spray of bloom; *b*, corolla; *c*, calyx with anthers; *d*, fruit; *e*, the same section.

ELDER.

COMMON ELDER. — The leaflets are smooth and are from seven to eleven. The cymes are flat and the berries are dark purple.

RED-BERRIED ELDER. — The stems are more woody. They have from five to seven leaflets which are downy beneath. The cymes are pyramid-like or convex. The berries are a bright red. It flowers in the spring and it grows in cold woods.

VIBURNUM.

NAKED VIBURNUM OR WYTHE-ROD. — The leaves are thickish, entire or wavy-toothed. Found in swamps.

SWEET VIBURNUM OR SHEEP-BERRY. — The leaves are ovate, pointed and very sharply serrate. The leaves grow on long and margined foot-stalks. The cymes are sessile. The fruit is quite large. The Sheep-berry grows into a small tree.

BLACK-HAW VIBURNUM.—They have shining, blunt oval leaves, but in other ways it is like the Sweet Viburnum,

ARROW-WOOD VIBURNUM.— They have smooth, round, ovate leaves, which are coarsely toothed and plainly marked with straight veins. The cymes are stalked and small. The fruit is small and a bright blue. They are shrubs and grow in wet places.

MAPLE-LEAVED VIBURNUM OR DOCK-MACKIE.— They have roundish, coarsely-toothed leaves with three-pointed lobes. They are downy on the under side. The cymes are long stalked. They are found in rocky woods and grow as a shrub.



SNOWBALL (*Viburnum*.)

a, flower cluster; c, barren or sterile blossom; d, fruit bearing blossom; e, fruit.

SNOWBALL VIBURNUM OR CRANBERRY TREE.— The leaves are smooth and have three-pointed lobes. The fruit is red and sour. The Snowball-tree is a cultivated Viburnum.

HOBBLE-BUSH VIBURNUM.— The branches are long and spreading and often take root. The leaves are heart-shaped or round ovate. They are many-veined and scurfy on the under side. The cyme is sessile and very broad. The fruit is first red and then turns blackish. The hobble-bush grows in damp woods.

VALERIAN FAMILY.

Strong-scented root, opposite leaves without stipules, five-lobed corolla. Flowers in cymes or clusters, white or purple. Calyx crowns the fruit in feathery bristles. Two or three stamens borne on the seed-cradle. Herbs.

In an old flower-book, in speaking of this plant, it says, in the quaint language of long ago:

“The root of the herb valerian is very like to the eye of a cat, and wheresoever it groweth, if cats come thereunto, they instantly dig it up for the love thereof, as I myself have seen in mine own garden, for it smelleth more-over like a cat.”

VALERIAN.— Calyx crowns the fruit in a tuft of feathery bristles.



VALERIAN.



PEPPER OF VALERIAN.

LAMB LETTUCE.— Like the Valerian, except that the calyx has no feathery bristles (See Pepper of V.) but has only one or more blunt teeth.

DRAWINGS.

MADDER FAMILY.

A regular corolla. Four or five stamens alternate with its lobes. Corolla borne on the ovary. Leaves either *whorled* or *opposite with stipules*.

MADDER.—Stamens five. Corolla five-parted. A berry-like fruit. Leaves in whorls.

BEDSTRAW.—Corolla four-parted. Four stamens, fruit a pair of dry akenes, smooth or rough, or covered with little prickles. Whorled leaves.

BUTTON-BUSH.—Has its leaves opposite with stipules. Many little white flowers in a head.

PARTRIDGE-BERRY.—Twin flowers on one ovary, so making a double-eyed berry. Creeping evergreen.



BLUETS.

BLUETS.—Or as children call them, Innocents. Separate flowers. Erect stems, opposite leaves with stipules. Fruit a dry pod.

FAREWELL TO THE FLOWERS.

Go to your peaceful rest,
Friends of a brighter hour,
Jewels on youthful Beauty's breast,
Lights of the ball and bower!
Well have ye done your part
Fair children of the sky,
We'll keep your memory in our heart
When low in dust ye lie.

—MRS. L. H. SIGOURNEY.

TEASEL FAMILY.

Herbs. Opposite leaves. No stipules. Flowers in dense heads, and with chaff-like bracts under each blossom. Tubular corolla. Four or five lobes bearing four stamens. Corolla on the ovary. Fruit an akene, containing one drooping seed.

TEASEL.—Flowers in a head, rough and chaff-like. Cup-shaped calyx, corolla with four lobes, stems and leaves rough.

SCABIOSA.—Flowers larger than the chaff. An odd calyx with bristle-shaped parts. The lobes of the corolla are unequal, and number four or five.



SCABIOSA, OR MOUERNING BRIDE.

DIE HERZ BLUME.

There grew a little flower once,
That blossomed in a day,
And some said it would ever bloom,
And some 'twould fade away;
And some said it was Happiness,
And some said it was Spring.
And some said it was Grief and Tears,
And many such a thing;
But still the little flower bloomed,
And still it lived and throve,
And men do it call "Summer Growth,"
But Angels call it "Love!"

—TOM HOOD.

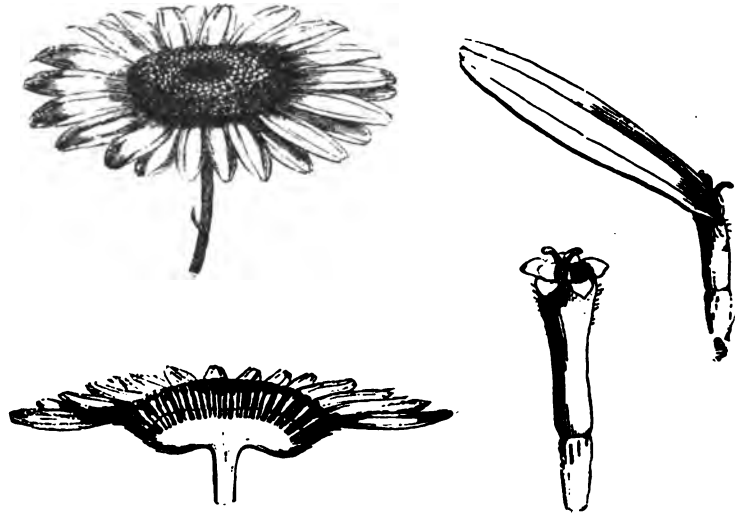


PARTRIDGE BERRY.



BUTTON BUSH.

DRAWINGS.



DISC. SECTION AND DETACHED FLORETS OF OX-EYE DAISY.

COMPOSITÆ.

THOSE are too difficult for young Botanists. There are a great many very little but perfect flowers, all huddled close together and surrounded by something that you would suppose was a calyx.

In the Chicory, which grows in the autumn by the roadside, would you suppose that every one of those purple petals, as you call them, was a corolla?

The sunflower is a big bunch of flowers, too. So with the Asters, Mayweed, the Dandelions (Lion's tooth), the Thistles, the Burdock, the Daisy, and the Golden-rod. Although you can do very little with the Golden-rod, I wish you would look at it a little more sharply. There are many different kinds. See if you cannot find five or six of them.

The little Coreopsis which grows by the roadside and which is often cultivated in the garden is a compositæ.

The origin of the Chicory is as follows, according to legend:

A beautiful maiden was travelling along the highway. Worn out with the long distance

and the hot rays of the sun, she lay down by the roadside to rest. As she rose a beautiful blue chicory — just the color of her lovely eyes! — sprang up to mark the spot.

LIST OF COMMON COMPOSITÆ OR ASTERWORTS.

Dandelion		
Aster		
Golden-rod		
Sun flower		
Thistle		
Lettuce		
Salsify—Coreopsis	Wild.	
Chicory		
Saffron		
Chamomile		
Arnica—Burdock		
Chrysanthemum		
Wormwood		
China Aster		
Linneæ		
Dahlia		
Feverfew		
Marigold	Garden.	
Coreopsis (cultivated)		
Everlasting		
Thoroughwort		
Tansy	Wild	
Mayweed		
Climbing		
Hempweed		
Mist Flower		
Daisy		
March Elder		
Cockle Bur		
Marigold		
Yarrow		
Cottonwood		
Arnica		
Thistle		Wild.



DAISY.



SUNFLOWER.

1, stem; 2, leaf; 3, pistil; 4, petal.



THISTLE.

a, plant; b, single blossom; c, seed.

COMPOSITAE.



CHICCORY.



COMMON CHAMOMILE.



DANDELION.

a. plant; b, blossom; c, d, fruit.

COMPOSITAE.



TANSY.

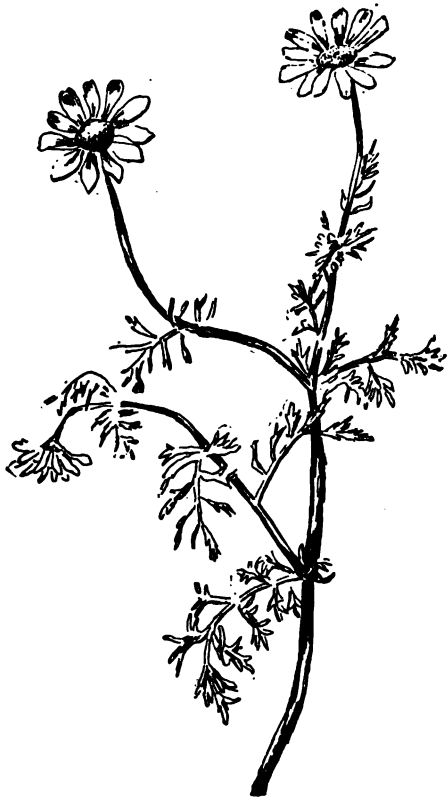


GOLDEN ROD.



YARROW (*Millefol.*)

COMPOSITAE.

WILD ASTER (*Purple*)WILD ASTER (*White.*)

MAY WEED.

COMPOSITÆ.

LOBELIA FAMILY.



LOBELIA

These are bitter, milky herbs, with peculiarly irregular flowers, the corolla being split down one side.

We have but one genus ; the Lobelia. There are four varieties of the Lobelia — the Cardinal Flower, the Spiked Lobelia, the Great Blue Lobelia, and Indian Tobacco.

CARDINAL-FLOWER.—Tall, smooth, raceme of rich cardinal-colored flowers. Blossoms in wet places in the late summer.

SPIKED LOBELIA.—Simple, straight, slender stem with a long spike-like raceme of pale blue flowers. Lowest leaves are obovate or oblong.

GREAT BLUE LOBELIA.—Hairy. Lance-shaped leaves. Flowers long, crowded into a leafy raceme. Light blue.

INDIAN TOBACCO.—Branching, grows quite high. Leaves rather longer and broad. Small, irregular, leafy racemes of pale blue flowers. Pods.

A DIALOGUE FROM SOUL GARDENING.

"Thou bearest flowers within Thy hand,
Thou wearest on Thy breast
A flower; now tell me which of these
Thy flowers Thou lovest best;
Which wilt Thou gather to Thy heart
Beloved above the rest?"

"Should I not love my flowers,
My flowers that bloom and pine,
Unseen, unsought, unwatched for hours
By any eye but Mine?"

Should I not love my flowers?
I love my Lillies tall,
My Marigold with constant eyes,
Each flower that blows, each flower that dies
To me, I love them all.

I gather to a heavenly bower
My roses fair and sweet;
I hide within my breast the flower
That grows beside my feet."

—DORA GREENWELL.

THE CARDINAL FLOWER.

Have you ever read Longfellow's pretty story of Hiawatha and Minnehaha?

Well, Indian folk-lore tells us there was another Hiawatha who had lost his beautiful Minnehaha. This Hiawatha did not sail off into the sunset to the land of the hereafter; but very savagely went about the country shooting with his mighty arrows any beautiful maiden he chanced to see.

One bright sunny day he lay down by a brook to rest. So soft were the sun's rays and so gentle the breezes that this angry-hearted Hiawatha was lulled to sleep. It

sad indeed that I cannot tell you that he rose from his refreshing sleep more gently disposed toward the maidens of his own land. But, alas, the beautiful doesn't always prevail even in legends; and the sad truth is that this savage young warrior's first act was to kill a beautiful maiden who chanced to be looking at her bright reflection in the water, and singing to herself as she plaited her shining locks of jet black hair.

And so incensed was Mother Earth, that on that spot where the maiden's heart blood spilled, she sent forth this blood-red cardinal flower.



CARDINAL FLOWER (*Lobelia Family.*)



HAREBELL (*Bell Flower Family.*)

DRAWINGS.

We joy to bind the festal wreath
Of glowing Autumn leaves;
Summer has vanished, hidden 'neath
The golden harvest sheaves.
With glowing Autumn leaves
We crown the harvest sheaves.

If thou art worn and hard beset
With sorrows, that thou wouldst forget,
If thou wouldst read a lesson, that will keep,
Thy heart from fainting and thy soul from sleep,
Go to the woods and hills! No tears
Dim the sweet look that Nature wears.

— LONGFELLOW

BELL-FLOWER FAMILY.

This family is very like the Lobelia except that the corolla in the Bell-Flower is regular. Parts are in fives. Milky juice.



BELL-FLOWER.

TALL BELL-FLOWER.—This is tall and leafy. It ends in a loose, leafy spike of blue flowers. The corolla is wheel-shaped with a long curved style.

HARE-BELL.—Slender, pretty plant growing no shady cliffs. Root-leaves round or heart-shaped and toothed, upper leaves very narrow. Flowers bright blue, bell-shaped nodding. Called in England "lady's thimble."

MARSH BELL-FLOWER.—A slender plant growing in the grass, in wet places. It has rough angular stems and lance-shaped leaves. Its few flowers are small and pale.



CANTERBURY BELLS.

CANTERBURY BELLS.—Hairy. Very large blue or white flowers, with big ears to the calyx which cover over the pod.

HEATH FAMILY.

The plants of this family are distinguished by the little hole at the top of each cell from which the anthers open. The stamens are free from the corolla, and are always twice as many as it; lobes.

So many of these are familiar to us all that I shall venture to pass them over with only a mention of their names. For example, the Huckleberry, Blueberry, Deerberry, Cranberry, Bearberry, Checkerberry.

Others of this family are not so familiar.

HEATH.

Calyx, corolla and stamens free, inserted on the seed-cradle, shrubby plants.

TRAILING ARBUTUS.—(The "Plymouth Mayflower,") a trailing *evergreen*, with round-heart-shaped leaves. A salver-shaped corolla with a slender tube. Fruit a naked pod. Corolla falls off early. The leaves look old and frost-bitten; this is because the plant is an "evergreen."

WINTERGREEN.

All parts free. Five little petals; ten stamens.

WINTERGREEN.—Flowers in a raceme, petals do not open very wide. One long style.

PIPSISSEWA.—One *short* style. Flowers in a general corymb or umbel. Sometimes only one or two flowers.

HEATH.—Little shrubby plants whose stems are covered with small, narrow leaves, and whose corollas do not fall off. We see them in this country only as hot-house plants. It is in Scotland we see the heath growing at large.

LABRADOR TEA. Similar to the pepper-bush, but the flowers are more like the Elderberry, that is, more like umbels than racemes. Then too, there is a woolly look to the underside of the leaves.

ANDROMEDA.—Corolla falls off after blossoming. The fruit is a dry pod. It has a five-toothed, tubular corolla.

SWEET PEPPER-BUSH.—That pretty bush with its long blossoms or rather its raceme of blossoms. It grows by the water side and sends such a sweet smell out from the shore. And in the fields it perfumes the air all about. It is such a pretty sweet-smelling bush. But you will be sorry enough if you leave a bouquet of its branches in your parlor over night. The little flowers are not long-lived. And such a shower of petals as you will find on the floor in a very short time after you have nicely arranged them in your vase.

RHODORA.—A shrub with very irregular corolla of rose-purple color. Corolla of five parts, and having stamens free.

KALMIA.—Called the American Laurel. You could not fail to tell this plant from its wheel-shaped leaves and its petals concave, looking like ten little pouches.

RHODODENDRON.—Corolla bell or funnel-shaped, five-lobed like the Kalmia, but without pouches. The leaves, too, are evergreen.

AZALEA.—Very like the Rhododendron, but its leaves fall in the autumn, and it has five stamens instead of ten as the Rhododendron has.

INDIAN PIPE.—This grows in leaf-mould under trees. It looks as if made of wax, stands erect, and at the end of the scape is a flower which turns downward giving to the whole plant the appearance of a pipe. These are usually wavy-white, but sometimes straw-colored.

THE RHODORA.

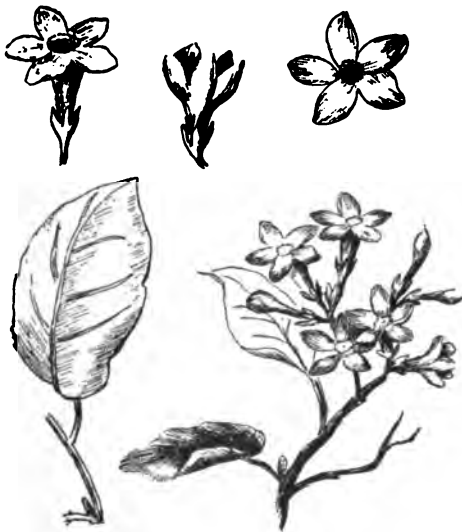
In May, when sea-winds pierced my solitudes,
I found the fresh rhodora in the woods,
Spreading its leafless blooms in a damp nook,
To please the desert and the sluggish brook;
The purple petals fallen in the pool
Made the black waters with their beauty gay,
Here might the red-bird come his plumes to cool,
And court the flower that cheapens his array.
Rhodora! if the sages ask thee why
This charm is wasted on the marsh and sky,
Dear, tell them that if eyes were made for seeing,
Then beauty is its own excuse for being.
Why thou wert there, O rival of the rose?
I never thought to ask; I never knew,
But in my simple ignorance suppose
The self same Power that brought me here brought
you.

— EMERSON.

DRAWINGS.



KALMIA.



MAYFLOWER.



SWAMP AZALEA.

RHODODENDRON.

A small not very plain calyx. A large, five-parted corolla. Stamens ten or more, bending to one side. Evergreen leaves, and a corymb or umbel of large, showy flowers. Only one kind common. The Great Rhododendron or Laurel Rhododendron, which has lance-oblong leaves, long, thick, green on both sides. Flowers large, with spots on the throat. Found in damp woods.

AZALEA.

Somewhat like the Rhododendron, but with thinner, falling leaves. Five long stamens. The wild Azalea often called Honeysuckle.

PURPLE AZALEA.— Flowers before the leaves. A funnel-shaped corolla with long lobes bending back.

WHITE AZALEA.— Flowers white, sweet-scented. Flowers come after the leaves. Leaves whitish on the under side.

WINTER-GREEN.

Evergreen, rounded leaves, near the ground, at the base of a scape which has at its end a raceme of greenish-white, nodding flowers. Five petals all separate. Ten stamens. The filaments are awl-shaped.

ROUND-LEAVED WINTER-GREEN.— Thick, shining leaves. Many-flowered raceme. Calyx lobes lance-shaped.

OVAL-LEAVED WINTER-GREEN.— Broad, thin leaves. Many flowers. Calyx lobes short and ovate.

SMALL WINTER-GREEN.— Roundish leaves, thick and small; few flowers.

ONE-SIDED WINTER-GREEN.— Thin ovate leaves; small flowers, and on one side of the raceme.

KALMIA.

This flowers in June. The flowers are showy, in umbels. Ten little pouches in the corolla.

MOUNTAIN LAUREL.— Lance, ovate leaves. Both sides a bright green. Flowers large, pale or deep rose-color. Flowers in terminal corymbs.

SHEEP LAUREL or LAMBKILL.— Lance-oblong leaves. Paler green underneath. Flowers are small and purplish. Corymbs of flowers are not terminal.

PALE LAUREL.— Leaves are oblong and close-sitting. White and powdery underneath. Flowers large but few. Found in swamps.

PIPSISSEWA.

Evergreen leaves, lance-shaped, toothed and crowded up and down a short stem. At the end of stem a corymb or umbel of fragrant flowers. Petals wide-spreading. Ten stamens, the filaments enlarged in the middle. One short style. A broad, flat stigma. Two kinds.

SHARP-POINTED UMBEL (Princes Pine).— Lance-shaped leaves. Serrate, bright-green, not spotted. Flowers four to seven.

SPOTTED PIPSISSEWA.— A small plant. *Blunt-pointed*, lance-ovate leaves. Spotted leaves. White flowers, one to four.

A DANDELION.

She stood knee-deep in meadow-grass
With joy of life's new comers,
A winsome, brown-eyed little lass
Of three brief careless summers.

At last a dandelion crossed
Her path of springtide pleasure;
She stopped an instant, wonder-lost,
Then brought to me her treasure.

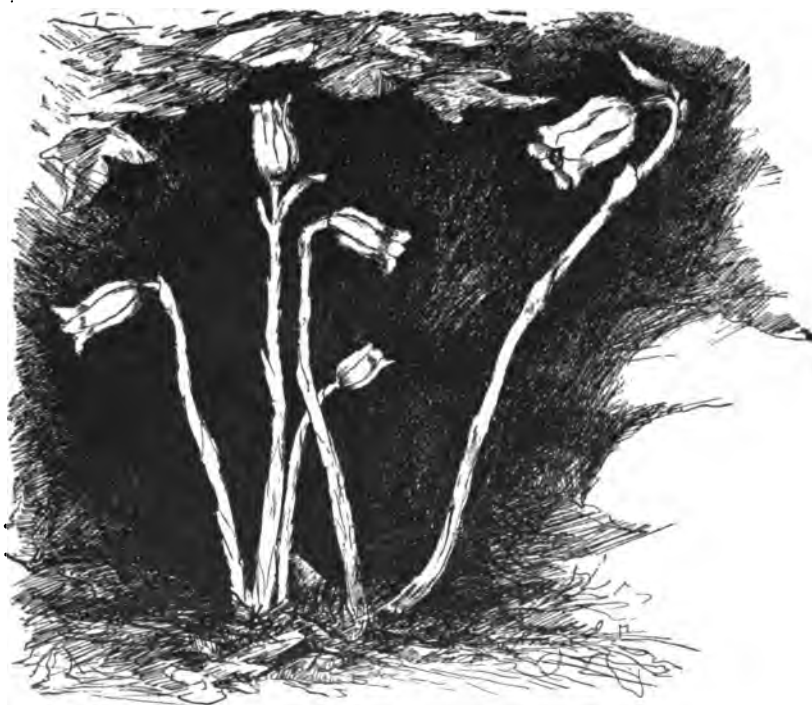
On such a shining radiant morn
No living thing seemed aimless,
Not e'en a weed was so forlorn
It grew unmarked and nameless.

Her swift glance sought the sky-held sun,
Then flashed back to the other.
"I've found," she cried, "Another one,
The sun's dear little brother!"

— LOUISE MANNING HODGKINS.



WINTERGREEN.



INDIAN PIPE.

HEATH FAMILY.

HOLLY FAMILY.

Trees or shrubs with alternate leaves and small regular flowers in the axils. A tiny calyx which, with the corolla, is free from the ovary. Stamens four or six. Anthers open lengthwise. Stigmas are almost sessile, or close-sitting. Fruit a pretty red berry.

The one form in our country is the Ilex or American Holly. The leaves are thick and

evergreen, toothed, and of oval shape; red fruit. It is the pretty red-berried vine we see on sale at Christmas time.

BLACK ALDER.—This, too, is a holly. Its leaves are thin, velvety, and they drop off in the autumn. It is a low shrub. Its blossoms are all in sixes, and it has, like the Holly, a pretty red fruit.



LEAF OF HOLLY.

DRAWINGS.

EBONY FAMILY.

Only one of its members found on American soil! The Persimmon Tree. A tree with alternate thick leaves.

In the axils are either flowers with sixteen stamens and a four-parted corolla; or large perfect flowers with eight stamens and a four-parted corolla.

The calyx is four-parted and quite thick. A pale yellow corolla. One pistil with four styles. A plum-like fruit, puckery to the taste when green, but sweet when it is yellow and ripe. Has eight flat seeds.



COMMON PLANTAIN.

PLANTAIN FAMILY.

Greenish flowers in a close spike. Calyx does not fall off. Has four sepals. A silver-shaped corolla. Stamens four, with fine thready filaments, borne on the corolla. One slender style. Pod two-celled, opening cross-wise, and falling off like a lid. Strong-ribbed leaves called Rib-Grass.

COMMON PLANTAIN.—Large ovate, several ribbed leaves, growing close on the ground. One long, close, green spike. Food for birds.

VIRGINIA PLANTAIN.—Small, hairy. Leaves oblong and three or five-ribbed. Seeds two.

RIPPLE-GRASS.—Hairy. Lance-shaped leaves. A short, thick spike or head on a scape.

SEASIDE PLANTAIN.—Smooth. Linear leaves which are thick. Seeds two. Found in and near salt marshes.

LEADWORT FAMILY.

Known by its dry, scaly, funnel-shaped calyx, and its five petals united only at their base, with one stamen standing before each, and five styles on a single one-seeded ovary.

THRIFT.—Lavender color. In a round head on a long, leafless stem. Leaves narrow, and in a close tuft at root.

ROSEMARY.—Lavender color. Spiked or at least close-sitting panicle. Spatulate leaves; nearly all at the root-stalk.

In old England, bridal wreaths used to be made of Rosemary; or, according to other writers, it was specially considered a funeral flower.

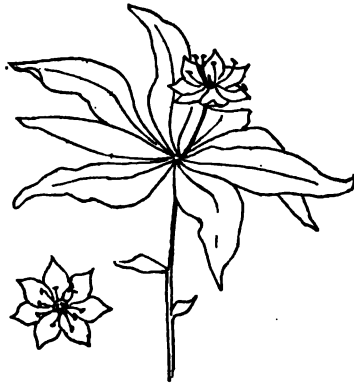
PRIMROSE FAMILY.

Herbs with perfect flowers. All distinguished by having their stamens of the same number as the lobes of the corolla, *one before each, inserted on the tube.*



PRIMROSE.

FEATHERFOIL.—Leaves under water—pin ate. flowering stems. hollow.



STAR-FLOWER.

STAR FLOWER.—Leaves many and in a whorl at the top of a slender stem. Calyx and corolla seven-pointed, and wheel-shaped, both free.

LOOSESTRIFE.—Leaves whorled or opposite, the entire length of the stem. Corolla five-parted. Wheel-shaped. Yellow.

DODECATHEON (Shooting Star).—Calyx and corolla five-parted and turned back, long anthers. Leaves all at the root. Calyx and corolla free. Leaves simple.

PIMPERNEL.—Blue or purple wheel-shaped corolla. Pod opens by a lid. Leaves like the Loosestrife. Calyx and corolla free.

THE PIMPERNEL.

"I'll go and look at the Pimpernel,
And see if she thinks the clouds look well!
For if the sun shine,
And 'tis like to be fine
I will go to the Fair.

So Pimpernel, what bode the clouds in the sky?
If fair weather, no maiden so merry as I."

Now the Pimpernel flower had folded up
Her little gold star in her coral cup,

And unto the maid
A warning she said:
'Though the sun shines down
There's a gathering frown

O'er the bright blue of the clouded sky:
So tarry at home for a storm is nigh."

It is a difficulty to discover why some of our sweetest and fairest spring-flowers should be associated in folk-lore with ill-luck. In the western counties, for instance, one should never take less than a handful of primroses or violets into a farmer's house, as neglect of this rule is said to affect the success of

the ducklings and chickens. A correspondent of *Notes and Queries* writes:—

"My gravity was sorely tried by being called on to settle a quarrel between two old women, arising from one of them having given one primrose to a neighbor's child, for the purpose of making her hens hatch but one egg out of each set of eggs, and it was seriously maintained that the charm had been successful.

LOOSESTRIFE.

THE STRICT LOOSESTRIFE grows in low ground, and, has its stems ending in a long, leafy raceme.

THE FOUR-LEAVED LOOSESTRIFE grows in sandy ground, its leaves are whorled, and its flowers in the axils of the leaves.

THE CILIATE LOOSESTRIFE grows in low ground, has heart-shaped opposite leaves, and fringed or toothed margins of the corolla.

THE LANCE-LEAVED LOOSESTRIFE has lance-shaped leaves. Otherwise very like the "Ciliate."

BIGNONIA FAMILY.

These have opposite leaves, large showy flowers. A two-lipped corolla, very irregular.

TRUMPET CREEPER.—Woody with little winged seeds and long pods. Climbs by tiny rootlets. Pinnate leaves. Calyx five-toothed. Corolla funnel-shaped, five-lobed and with four stamens.

CATALPA.—Tree. Simple, heart-shaped leaves. White flowers in panicles. Calyx two-lipped. Corolla bell-shaped. Stamens two.



UNICORN PLANT.

UNICORN PLANT.—Rank, clammy herb. Wingless seeds in a large, long-pointed fruit. Crested, long-beaked, the beak splitting into two crooked horns. Corolla a dull color. Two stamens, two or four.



FOUR-LEAVED
LOOSESTRIFE.



PIMPERNEL.



YELLOW LOOSESTRIFE.



BROOM-RAPE (*Orobanchae Rapum*).
a, plant; b, parasitic growth; c, leaf; d, corolla in section;
e, stamens; f, pistil.

BROOMRAPE FAMILY.

These herbs are parasites on the roots of trees. They have irregular corollas, though monopetalous. Four stamens in groups of twos. No green herbage, yellowish or brownish.

BEECH-DROPS.—Slender branched stems with a few scales and many flowers scattered along its length.

SQUAW-ROOT.—Short, thick stems, covered with broad scales. Plant looks like fir-cone. Flowers under the upper scales. A great medicine with Indian squaws, hence its name.

NAKED BROOMRAPE.—Slender stems, or scapes with one flower. Stamens on the curved corolla.

FIGWORT FAMILY.

The blossoms of this family have oddly irregular corollas, the stamens arranged in pairs, two lobes of the corolla always erect, and three drooping.

MULLEIN.—Tall, woolly. Yellow flowers in a long spike. Calyx and corolla five-cleft. Stamens five, some of them often imperfect



SPEEDWELL.

SPEEDWELL.—Small flowers. Corolla four parted at the border. Two lobes smaller than the other two.

Two protruding stamens. Pod flattened, many seeded.

The Common Speedwell is downy, has creeping stems, dense racemes.

Grows in dry ground.

Marsh Speedwell has a zigzag, loose, irregular raceme.

TOAD-FLAX.—Corolla rather tubular and irregular. A peculiar inward projection of the lower lip so that it looks, so some botanists have thought, like a little palate across the mouth of the corolla. There is a little spur at the base of the corolla. Common name among children is "Butter and Eggs."

COMMON TOADFLAX.—The stems beanish and are crowded with leaves which are pale and linear shaped. The flowers are crowded in a close raceme. They are yellow, large and showy, while the palate is orange color.

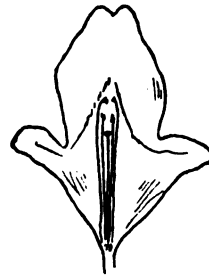
WILD TOADFLAX.—There is a kind called the Wild Toadflax with a simple, slender stem, little scattered linear leaves and prostrate shoots at the bottom with broader leaves. The flowers are very small, blue, and in a slender raceme.

FIGWORT.—Corolla ovoid, small, greenish purple. Four short unequal erect-lobes and one small one recurved.

TURTLE-HEAD.—Corolla shaped like a turtle's head. The mouth closed or nearly closed. Four stamens with woolly anthers.



SNAP-DRAGON.



TURTLE HEAD.



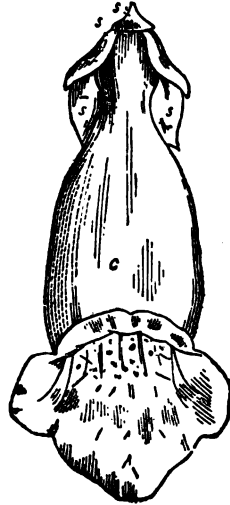
TOAD-FLAX (*Butter and Eggs*).

FIGWORT FAMILY.

SNAP-DRAGON.—Similar to the Toadflax except that the Snap-Dragon has a little sac on its under side.



FOXGLOVE SPIKE.



FLOWER OF THE FOXGLOVE.
c, corolla; *s*, calyx.

CULVER'S ROOT—The corolla is salver-shaped. The flowers form a spike. The stamens are two and are larger than the four lobes of the corolla.

BLUE HEARTS.—The corolla is shaped like a salver and has five lobes or scollops. The stamens are four and are enclosed. The calyx is shaped like a tube and has five tooth-like points.

GERARDIA.—The corolla is rather irregularly five-lobed, and is in the shape of a funnel or bell. It has four stamens.

PAINTED-CUP.—The corolla is shaped like a tube and has two lips. The narrow upper lip is erect or arched, and encloses the four stamens. The flowers form a spike. The calyx is shaped like a tube. The bracts are often scarlet color. The pod has many seeds.

LOUSEWORT.—The corolla is like that of the Painted-cup. The flowers are in a spike. The leaves are fern-like and the bracts are green and small.

COLLINSIA.—In this the lower lip has a little sac in the middle. It is two-lipped and a short tube with a queer little bulging at its base on the upper side.

PENSTEMON.—The corolla has an open, irregular two-lipped mouth. Sterile filament and four stamens.

MONKEY-FLOWER.—This corolla is also two-lipped. The upper lip with the sides turned back while the lower lip turns down. An elongated calyx with five tooth-like points. Stamens are four.

HEDGE HYSSOP.—The corolla is open and somewhat two-lipped. It has only two perfect stamens. The calyx is five-parted. The sterile filaments are enclosed. Sometimes there are more. The corolla is yellowish or whitish.

FALSE-PIMPERNEL.—The corolla is like that of the Hedge Hyssop but the sterile filaments are long and protrude from a purple or blue corolla.

FOXGLOVE—The corolla is tubular shape and open, with the border somewhat scalloped. It is large with either purple or white spikes.

MULLEIN.

COMMON MULLEIN.—It is tall and woolly-like. The bases of the leaves are prolonged so that the simple stem is sort of winged. The flowers are in a long, thick spike, and are yellow. Two of the filaments are smooth. It grows in fields.

MOTH MULLEIN.—Grows from two to three feet high, is green and smooth. The leaves are toothed. The flowers are in a loose raceme and either yellow or white. The filaments are covered with yellow wool. It grows on the roadsides.

SPEEDWELL.

CULVER'S-ROOT SPEEDWELL.—It grows quite tall. The leaves are lance-shaped, but pointed, and grow in whorls. The flowers are crowded and grow in clustered spikes. They are a whitish color.

WATER SPEEDWELL.—The stems root at the creeping lower part then grow erect. The leaves



HEDGE HYSSOP.



GERARDIA.



MULLEIN.

FIGWORT FAMILY.

are ovate-lanceolate, but sort of heart-shaped at the base and are sessile. The corolla is pale blue with dark stripes.

BROOK SPEEDWELL OR BROOKLIME.—

It is like the Water Speedwell excepting that the leaves are ovate or oblong, and grow on foot-stalks.

MARSH SPEEDWELL.— It is smooth and slender. The leaves are linear and acute and have no footstalk. The flowers grow in a loose, zig-zag raceme.

COMMON SPEEDWELL.— They have downy, creeping stems. The leaves are wedge-shaped and oblong, and toothed. Flowers all in a crowded raceme.

THYME-LEAVED SPEEDWELL. — They grow from a creeping base to two or four inches high. They are small and smooth. The leaves are ovate or oblong with the lowest ones rounded and growing on footstalks. They grow very common in the fields.

PURSLANE SPEEDWELL OR NECK-WEED. — They are smooth, branching and erect. The lower leaves are toothed and oval or oblong shape and grow on foot-stalks, while the upper leaves have no foot-stalks, and are oblong-linear and not toothed.

CORN SPEEDWELL.— They are hairy. The upper leaves are sessile, whole and lance-shaped,

and the lower leaves are ovate, crenate and on foot-stalks.

GERARDIA.

PURPLE GERARDIA.— The leaves are linear and have a rough margin. The flowers are one inch long, and grow on short stalks.

SLENDER GERARDIA.— The leaves are also linear. The flowers are about half an inch long and grow on a long and slender stalk.

The corollas of both the Purple and Slender Gerardia are rose-purple. The calyx is in the shape of a bell and has five short teeth.

DOWNY GERARDIA.— They grow from three to four inches high. The leaves are oblong or lance-shaped, and covered with a fine, close down. The upper leaves are entire while the lower ones have a very wavy outline.

SMOOTH GERARDIA.— They are smooth, and grow from three to six feet high; they are very leafy, and are glaucous or powdery. The lower leaves are twice pinnatifid, and the lower are either once pinnatifid or entire.

CUT-LEAVED GERARDIA.— They grow from two to three feet high, are bushy-branched, very leafy and quite downy. The leaves are pinnatifid, and the divisions are cut and toothed, and quite crowded.

LEGEND OF THE SPEEDWELL.

You remember the vessels in which the Puritans sailed from Holland. One was named the Mayflower, the other one, which put back into the harbor, was called the Speedwell.

This Speedwell, some people say, was named from this little flower. As these Puritans were a very religious people, it is quite likely the ship may have been so named for this reason: The Speedwell, the bright blue blossom which brightens our wayside hedges in the spring-time, is said to have within it, a pic-

ture of the kerchief on which are imprinted the features of Christ. According to the old German legend, when Christ was carrying the cross up Calvary, St. Veronica kindly came forward and wiped the great sweat-drops from his forehead.

As a reward, the features of Christ remained upon the linen. Some one found in the little blue Speedwell a fancied resemblance to the kerchief and the imprinted features. For this reason, the flower was re-named the Veronica.

The speedwell folds her leaves of blue,
In tears that each dark petal gem
With many a dainty diadem
And spray of glistening, starry dew;

While slowly stealing up the vale,
O'er banks and dells and mossy crags,
By many a pool of reedy flags
The mists of twilight softly sail.

VERVAIN OR VERBENA FAMILY.

Herbs with shrubby leaves; a two-lipped, or four or five-lipped corolla. One ovary and a single seed. Fruit berry-like with four stones, or dry, splitting into akenes.

LOPSEED.—Cylindrical calyx, which is two-lipped. Corolla two-lipped. Herb. Found in woods. Small, whitish flowers in loose spikes. The calyx containing the akenes, turns down.

VERVAIN.—Calyx tubular, and five-toothed. Corolla salver-shaped, with five unequal lobes. Flowers in spikes or heads.

A bit of vervain was in early times, and even now in some localities, put into the bridal wreath.

VERBENA.

AUBLET'S VERBENA.—They are rather hairy. The leaves are pinnatifid or cut. The spikes are like a corymb, flat-topped in the blossom. The corolla is a light purple.

COMMON VERBENA.—Grows from one to three feet high, is slender, erect and branched. The leaves are close-sitting, cleft or pinnatifid and toothed. The spikes are slender. The flowers are very small and purplish color.

WHITE VERBENA.—The leaves are ovate or oval, serrate and on a footstalk. The flowers are white, very slender and in spikes.

BLUE VERBENA.—The leaves grow on little foot-stalks, are lance-shaped or lance-oblong and the lower ones are sometimes cut once or twice at the base. The flowers are blue, and thick, and close in spikes. The stem grows from four to six feet high.

LOW VERBENA.—The leaves have no foot-stalks are lance-linear shape and tooth a very little. The flowers are purple and grow in one or more thickish spikes.

BORRAGE FAMILY.

Sweet smelling, but *not square-stemmed*. Herbs. Alternate leaves. Regular flowers, in fives as a whole. Flowers in one-sided racemes, coiled up at the tip, and unfolding slowly as the flowers expand.

Heliotrope and *Forget-me-not* are the most well known.

VIPER'S BUGLOSS.—The corolla is funnel-shaped the lobes are rather unequal and blue or purple. The Akenes or seed-like fruit is erect and fixed by the lower end. It is not prickly. The throat of the corolla is naked and open and the stamens are rather unequal and protruding.

BUGLOSS.—This is like the Viper's Bugloss but the throat of the corolla instead of being open is closed with fine, blunt scales. The stamens are enclosed and the tube is curved.

BORRAGE.—The Akenes are erect and fixed by the lower end and separate from the style. The corolla is very regular and is wheel-shaped with acute lobes. The throat is closed with fine converging scales, one in front of each lobe. The plant is rough or bristly.

COMFREY.—This is like the Borrage in many ways. The akenes are erect and fastened by the lower end. The corolla is very regular, but is shaped like a tube instead of a wheel and is five toothed.

FALSE CROMWELL.—The akenes are the same as in the Bugloss. The corolla is tubular-shaped with the acute lobes erect. The open, naked throat has fine little projections. Generally the Akenes contain a little stone.

LUNGWORT.—The corolla is shaped like a rounded, spreading trumpet. The Akenes are the same as in the Viper's Bugloss and rather fleshy. The plant is very smooth.



FORGET-ME-NOT.

SCORPION GRASS OR FORGET-ME-NOT.

—The corolla is in the shape of a round spreading salver or sometimes funnel-shaped. It is very short and in the bud, one edge of the lobes are inside and the other outside. The Akenes are fixed by lower end, separate from the style and erect.



BLUE VERVAIN.
(Vervain Family.)



COMFREY [THOROUGH-WORT].
(Borage Family.)



FORGET-ME-NOT.
1, plant; 2, flower; 3, corolla; 4, seed; 5, capsule.
(Borage Family.)

CROMWELL.—The corolla is short, funnel-shaped and of a white or whitish color. In the bud two of the lobes cover all the rest. The Akenes are the same as in the Forget-me-not.

PUCCOON.—The corolla is shaped like a salver. It is long and orange yellow. Two of the lobes cover the others in the bud.

STICKSEED.—The Akenes are prickly and are fixed by their side or upper end to the base of the style. The corolla is salver-shaped, erect and prickly on the margin. There are fine scales in the throat. The flowers are small.

HOUNDS TONGUE.—The corolla is salver-shaped, oblique or flattened from above. It is short, rough and prickly all over. The Akenes are prickly and fixed to the base of the style by their tops or sides.



HELIOTROPE.

HELIOTROPE.—The ovary is not lobed but when ripe splits into four Akenes. The corolla is short.

LEGEND OF FORGET-ME-NOT.

It was in the golden morning of the early world, when an angel sat weeping outside the closed gates of Paradise. He had fallen from his high rank because he loved a daughter of the earth, nor was he to be allowed to enter Paradise again until this daughter whom he loved had planted the Forget-me-not in every corner of the world. He came down to assist her; and, hand-in-hand they wandered over the land, planting everywhere the forget-me-not. When their task was ended, then they were allowed both to enter Paradise.

For the beautiful girl, without tasting the bitterness of death, became immortal like the angel whose love she had won as she sat by the riverside twining the Forget-me-nots.

THE FORGET-ME-NOT.

When to the flowers so beautiful,
The Father gave a name,
Back came a little blue-eyed one,
All timidly it came.
And standing at its Father's feet,
And gazing in his face,
It said, in low and trembling tones,
And with a modest grace,
"Dear God, the name thou gavest me,
Alas! I have forgot."
The Father kindly looked him down
And said, "Forget-me-not."

WATER-LEAF FAMILY.

These plants are herbs with compound, toothed and usually alternate leaves. The flowers are regular.

The ovary is globular and bears its seeds on the walls. Corollas bell or wheel-shaped, lobes and stamens always five. Style two-cleft.

NEMOPHILA.—Is the one cultivated in our garden. Leaves opposite. Calyx with five reflexed teeth between the divisions.

ELLISIA—The lower leaves are opposite. The stamens do not project beyond the corolla. The calyx has no little teeth between the divisions and it grows larger when the fruit forms.



NEMOPHILA.

NEMOPHILA.—This is the same as the Ellisia, but there are fine teeth between the divisions which are bent backwards or downwards.

PHACELIA.—The leaves are alternate. There are no teeth or appendages of the calyx or else they are very small. The stamens are long. The seeds grow on the walk of the pod or on two little lines or ridges. These plants generally grow one year only.

WATERLEAF.—These plants have scaly-toothed root-stalks. The flowers are white or bluish, and clustered. The filaments are bearded below. The pod contains from one to four seeds which are in a sort of membrane.

WATERLEAF.

VIRGINIA WATERLEAF.—They grow from one to two feet high and rather smooth. The calyx is hairy. The leaves are pinnately divided into five or seven little lobes which are toothed or cleft. Grow in rich woods.

CANADA WATERLEAF.—The leaves are rounded and parted like a hand into five lobes which are longer than the peduncle or stalk. The calyx is smooth. Grow in rich woods.

POLEMONIUM FAMILY.

Herbs, not twining (except in the *Cobæa*). The flowers are regular and arranged *in fives*, except that the pistil is *in threes*. The petals overlap.

COBÆA.—These have tendrils on the pinnate leaves by which they climb. The flowers are single and grow from the axils of the leaves. The corolla is large, bell-shaped and dull-colored.



GILIA.

GILIA.—The stamens are all the same height, and do not turn to one side. The corolla is shaped like a funnel or salver. The leaves are once or thrice pinnately-divided. There are more than one seed.

POLEMONIUM.—This is not a climbing plant. The stamens are the same height. The leaves are compound and most of them alternate. The corolla is nearly wheel-shaped and is light blue. The stamens turn toward the lower side of the flower.

PHLOX.—These plants do not climb. The flowers grow in panicled cymes or clusters. The corolla is short and inclosed. It is in the shape of a salver with a long tube, on which the stamens are inserted at unequal heights. The calyx has five angles. The leaves are sessile, entire, and grow opposite each other except at the top.

PHLOX.

PANICLED PHLOX.—The stem grows from two to four feet high and is stout. The upper leaves are heart-shaped at the base while the others are lance-oblong or ovate-lanceolate, pointed and tapering. The flower-cluster is large and broad. The corolla is pink or white, with whole lobes. It flowers in summer.

SPOTTED PHLOX.—The stem is purple-spotted, simple and slender, and grows one or two feet high. The lower leaves are lance-shaped and the upper ones are slightly heart-shaped at the base, and taper upwards into a lance-ovate shape. The panicle or flower-cluster is narrow. The calyx has blunt, teeth-like points. The corolla is a pinkish-purple, varying to white with lobes entire.

HAIRY PHLOX.—The stems are rather clammy and hairy, slender, and grow one or two feet high. The leaves are lance-linear or lance-shaped. Flowers form a flat cyme. The calyx has long, arrow-like teeth. The corolla is rose-pink.

RUNNING PHLOX.—Spreads by creeping runners which bear smooth, thickish and roundish leaves. The flowering stems bear oblong leaves and grow from four to eight inches high. The flowers are large and not many. The corolla lobes are entire, roundish and red-purple.

SPREADING PHLOX.—The rather clammy stem grows from nine to eighteen inches high. The leaves are broad, lance-shaped or else ovate-oblong. The flowers form a loose cyme. The lobes of the corolla are obcordate, that is, heart-shaped, with the broad end at the top, and they are rather far apart. Of a pale lilac or blueish color.

GROUND PHLOX MOSS PINK.—This plant is creeping, and tufted in flat mats. The leaves are small and crowded, and either lance-linear or awl-shaped. The corolla is pink or rose-color with a darker or sometimes a white eye. It flowers in spring and grows in sandy or rocky soil.



VERBENA (*Verbena Family.*)



POLEMONIUM (*Polemonium Family.*)

DRAWINGS.

DRUMMOND'S PHLOX.—It is branched and somewhat clammy. The leaves are lance-shaped, the upper ones broadening into heart-shaped at the base. The lobes of the corolla are entire and crimson or rose color.

POLEMONIUM.

BLUE POLEMONIUM.—Grows on an erect, leafy stem, one or two feet high. It has many leaflets and many seeds. It is commonly called Jacob's Ladder.

WILD POLEMONIUM.—The stems are rather weak and spreading. The leaflets are from seven to eleven and the flowers are few.

THE GARDEN FRIENDS.

PHLOX AND ROSE.

One autumn day when skies were gray,
The gardener came to take away,
And give a corner of its own,
A Phlox, that had with Roses grown,
And which had found among its roots,
In June, some green and tender shoots
That soon the sweetest flowers bore
That ever bush in garden wore.
And every week thereafter grew,
Until the Phlox had blossomed, too,
Roses as lovely and as shy,
Half hidden from the passer-by.
"Ah!" said the bush, that autumn eve.
"When you are gone how I shall grieve.
In summer days for me you've made,
From burning sun, a pleasant shade.
And in the winter time, thought I,
Still care and shelter will be nigh;
I love you more than I can tell.
How can I bear to say farewell?"

"Dear Rose," the stately Phlox replied,
"We must not part, whatever betide;
Such gratitude as yours, that brings
An offering of the sweetest things
Before one's own fair blossoms grow,
I ne'er should find again, I know.
Cling closely, dear, and you shall be
Borne to my new abode with me."

The Rose obeyed, and hidden quite,
Haply escaped the gardener's sight,
And when, again, 'twas fragrant June,
And all the song-birds were in tune,
Peeping from out the Phlox's green
Its lovely crimson blooms were seen.

—MARGARET EYTINGE.

MINT FAMILY.

Square stems, irregular corolla, and sweet-smelling dotted leaves; and you have a mint.

There are the Lavender, Pennyroyal, Mint, Horehound, Sage, Hyssop, Catnip, Thyme, Selfheal, Sculcap.

SWEET BASIL.—The leaves are ovate-shaped and fragrant. The white flowers are in racemes. The calyx turns backwards or downwards with the upper lobe round and large. The lower lip of the corolla is entire while the upper is four-cleft. The four stamens turn down and rest on the lower lip of the corolla.

LAVENDER.—The leaves are narrow and hoary. The pale blue flowers are in a naked and peduncled spike. The corolla is fine lobed and the lobes are about equal. The four short stamens turn down as in the Sweet Basil. The calyx is five-toothed.

GERMANDER.—The flowers are generally purplish, sometimes white and in a spike. The corolla is cleft down the upper side, the lower lobe being larger than the other four. The four stamens are erect and project from the upper side of the corolla. The seed-like fruit is veiny.

BLUE CURLS.—The blue corolla is cleft into five nearly equal lobes which are inclined to turn forward. The stamens are very long and curved.

FALSE PENNYROYAL.—The stamens slightly protrude from the blue five-lobed corolla. Otherwise like Blue Curls.

MINT.—The flowers are small. The corolla is almost equally four lobes, but barely two-lipped. The stamens are four and do not show above the upper side of the flower. The anthers of the four stamens are nearly equal in length.

WATER-HOREHOUND.—The flowers grow in dense axillary whorls. The corolla is like that of the Mint, and the stamens are only two with anthers.

DITTANY.—The flowers grow in terminal cymes. The corolla is two-lipped, with the upper lip nearly flat or spreading, and has two lobes or notches at the end. The calyx has five, tooth-like points of about equal length, and has fine hairs in the throat.

PENNYROYAL.—The calyx is two-lipped with three notches in the upper and but two in the lower lip, and bearded in the throat. The corolla is small and has two sterile filaments.



SAGE (*Salvia officinalis*.)
a, plant; b, blossom; c, corolla, open.



GROUND IVY.

MINT FAMILY.

HORSE BALM.—The calyx is like that of the Pennyroyal, but the throat is naked, and that of the large corolla is bearded. The middle lobe of the lower lip of the corolla is large and hangs down, and has fringe-like points.

HORSE MINT.—The flowers are crowded in leafy-bracted heads. The lips of the large corolla are long and narrow. The upper lip is arched, whole or notched slightly, and holds the stamens. The five-toothed calyx is tubular.

BLEPHILIA.—The flowers are in heads. The calyx is two-lipped, and the upper lip has three bristle-pointed teeth.

SAGE.—The calyx is two-lipped with the upper either three-toothed or whole. The anthers grow astride the end of the filament, and have but one cell.



SAGE.

GIANT HYSSOP.—A tall herb with the flowers in spikes, and small. The corolla is two-lipped. The outer pair of stamens are lower than the inner pair. The upper pair curve downward.

CATNIP.—The flowers grow in terminal spikes or clusters. The stamens, arranged in pairs, ascend under the upper lip of the two-lipped corolla.

GROUND-IVY.—The flowers grow in the axil of the kidney-shaped leaves. The stamens and corolla are the same as in the catnip.

HYSSOP.—The tubular-shaped calyx has five equal, tooth-like points and fifteen little veins or lines. The upper lip of the corolla is flat and open, or slightly concave. The stamens are four, long, and grow in pairs, with the upper pair shorter than the lower or outer pair.

MOUNTAIN-MINT.—The flowers grow in dense heads or clusters. The calyx is ovate, bell or tube-shaped. It has from ten to thirteen veins or lines. The stamens are distant and not under the upper lip. The corolla and stamens are the same as in the Hyssop.

SUMMER SAVORY.—The corolla stamens and calyx the same as the Mountain Mint, but the flowers are clustered in the axils or spikes.

BASIL.—The flowers grow in a head-like cluster which are surrounded by awl-shaped bracts. The calyx is tube-like. The anthers of the stamens grow under the upper lip in pairs.

BALM.—The flowers grow in loose clusters. The calyx is shaped something like a bell and a tube, and has two lips. The corolla turns upward.

FALSE-DRAGONHEAD.—The flowers are large and grow in naked spikes. The throat of the corolla is like an enlarged funnel and the upper lip is concave.

SELF-HEAL.—The flowers grow in a short, bracted spike. The calyx is two-lipped with the lip toothed, very veiny and closed over the fruit. The upper lip of the corolla is arched and hood-like in shape.

SCULL-CAP.—The two lips of the calyx are entire, helmet-shaped, not veiny and enclose the fruit. The upper lip of the corolla is shaped something like a hood, or arched.

MARJORAM.—The flowers are spiked and have large colored bracts. The calyx is hairy in throat. The corolla, stamens, etc., grow same as in Mountain Mint.

THYME.—This is very much like the Marjoram, but the flowers grow in loose clusters, and the bracts are very small.



THYMUS.

HOREHOUND.—The clusters of the flowers are head-like and axillary. The calyx is not two-lipped but is ten-toothed. The upper lip of the corolla is arched.

MOLUCCA BALM.—The corolla's lip is arched but the funnel-shaped calyx is larger than the corolla. The calyx is not lipped but five-toothed.



PEPPERMINT.

POSIES.

Oh, for the dear old-fashioned posies,
 Growing close by the kitchen door;
 Poppies soft to bring forgetting,
 Balm and mint for a spirit sore.

Heartsease sweet for hearts that are aching,
 Ragged ladies and four o'clocks;
 Marigold and wealth uncounted,
 Cabbage roses and hollyhocks.

Old time pinks with their spicy odor,
 Tiger lilies and columbine;
 Honey sweet in its golden chalice,
 Humming birds in the climbing vine.

Sunflowers tall that turn their faces
 Out to the West as the sun goes down;
 Morning-glories that close and cower
 Under the rays of his burning frown.

Clover fields with the bees a-humming,
 Drowsy grasses, which sway and nod;
 Busy reapers the ripe grain cutting,
 Fragrant breath of new-mown sod.

Oh, for the dear old-fashioned posies,
 Growing close by the kitchen door,
 And for the loved familiar faces
 Gone from our gaze forever more.

—SELECTED.

HEMP NETTLE.—The bell or top-shaped calyx is quite a little shorter than the corolla and has spiny-pointed teeth. The anthers open crosswise.

HEDGE-NETTLE.—The calyx is five-toothed, bell or top-shaped and shorter than the corolla. The corolla is not enlarged in the throat, and the stamens turn down after shedding the pollen. The anthers open lengthwise.

DEAD-NETTLE.—This resembles the Hedge-Nettle but the throat of the corolla is enlarged and the teeth of the calyx are not spiny.



WHITE DEAD NETTLE.

MOTHERWORT.—The leaves are cleft and cut. The corolla is not enlarged in the throat. The calyx is top-shaped with spiny teeth. The akenes or seed-like fruit are three-angled.

MINT.

WILD MINT.—The flowers grow from the axils of the petioled leaves, around the stem in head-like clusters. One variety of these plants is smooth, but the general kind is hairy. They are found in wet places.

PEPPERMINT.—The petioled leaves are oblong or ovate. The flower-clusters are crowded in short spikes. The plant is smooth.

SPEARMINT.—These are nearly smooth. The flower-spikes are paniced or in compound, irreg-

ularly branched flower-clusters. The leaves are lance-ovate and nearly sessile.

HORSE-MINT.

BALM HORSE-MINT or OSWEGO TEA.—The top leaves and little bracts are tinted with red. The corolla is long and bright red. The plant is green and rather hairy. Grown on moist lands or in gardens.

COMMON HORSE-MINT.—This plant is pale, smoothish or with soft down on it. The flowers are small, purple or whitish.

DOTTED HORSE-MINT.—The leaves are lance-shaped and the bracts are purple or yellowish. The corolla is yellowish with purple spots.

SCULLCAP.

MAD-DOG SCULLCAP.—Slender, smooth and branched. The leaves are oblong or lance-ovate, pointed and the edges serrate or like the teeth of a saw. They grow on slender stalks. The flowers are small and grow from the axil of the leaves, in one-sided racemes.

LARGER SCULLCAP.—They grow from one to three inches high, are hairy and rather clammy. The leaves are wrinkled, velvety and ovate or heart-shaped. The upper lip of the corolla is blue, and the pale lower lip is spotted with purple.

HAIRY SCULLCAP.—They grow from one to three feet high, are slender and hairy. The leaves have many veins, are ovate or wedge-shaped. The flowers grow in terminal racemes.

NARROW-LEAVED SCULLCAP.—They grow one or two feet high, are slender and covered with fine hairs or down. The leaves are entire and linear or lance-oblong. The flower-raceme is short.

DWARF SCULLCAP.—They grow from three to six inches high, and are covered with fine down. The leaves are round-ovate or the upper ones lance-ovate and entire. The leaves are about half an inch long. The flowers grow single from the axil of the leaves.

SLENDER SCULLCAP.—Grows one or two feet high. The leaves are sessile and lance-ovate with a rather heart-shaped base. The margin is serrate or saw-toothed. The flowers are single and grow about two-thirds of an inch long, and are close sitting in the axil of the leaves.

CONVOLVULUS FAMILY.

Here we have the Morning Glory, the Sweet Potato Bindweed, the Cypress vine, and the Dodder, one of the parasites. Variety enough isn't there? But after all they have their family traits.

All twining or trailing, often with juicy stems, pod-bearing, alternate leaves and regular flowers. Everything in fives except the pistil which is two or four-celled, with one seed standing erect in the bottom of each cell.

Dodders are leafless parasites of this family.



DODDER.

QUAMOCLIT.—These plants have foliage and bear large flowers which open for only a day. They have one style. The corolla is crimson or scarlet and in the shape of a tube or trumpet, and the stamens protrude beyond the mouth of the tube or trumpet.

SWEET POTATO.—It is a foliage plant with large flowers which open for a day. The corolla is bell-shaped and the stamens are enclosed in the tube. The stigma is thick and has two lobes. The pod contains four cells with a seed in each cell.

MORNING-GLORY.—This is the same kind of plant as the Quamoclit, having large flowers which bloom but for a day. The corolla is fun-

nel-form with the stamens enclosed in the tube. The stigma is thick and has a round head-like top with two or three lobes. The pod has two or three cells with two seeds in a cell.

CONVOLVULUS OR BINDWEED.—This also has a large flower which blooms but one day. The corolla is bell-shaped and the stamens are enclosed in the narrow part. It has two long linear or oblong stigmas. The calyx is naked at the base.



COROLLA OF BINDWEED.

BRACKETED BINDWEED.—This is very much like the Convolvulus excepting that instead of a bell-shaped corolla it is funnel-form and the calyx is covered by two large bractlets.

DODDER.—These plants have thread-like stems, which are either reddish, yellowish or whitish. They grow by twining around other plants and attaching themselves to the bark on which they feed. The flowers grow in clusters with bell-shaped corollas and five scales inside the stamens. The embryo is spiral without any seed-leaves. The pod has two seeds and two cells.

QUAMOCLIT.

CYPRESS-VINE QUAMOCLIT.—The leaves are narrow and pinnately dissected into thread-like divisions. The limb or spreading part of the corolla has five rather deep lobes.

SCARLET QUAMOCLIT.—The leaves are heart-shaped and nearly if not wholly entire. The corolla has very small lobes or none at all.



BINDWEED.

1, branch; 2, pistil; 3, fruit.

MORNING GLORY.

COMMON MORNING-GLORY.—The stem has little hairs on it which bend downward. The leaves are heart-shaped. The flowers are purple or pink or white and grow from three to five on the flower-stalk. The pod is three-celled. The flower opens in the early morning and closes in the bright sunshine.

WILD MORNING-GLORY.—The stem is smooth and the root is large. The leaves are heart-shaped, some narrow in the middle. The flowers grow from one to five on the stalk or peduncle and are white with purple in the tube. They open in the sunshine.

GENTIAN FAMILY.

Smooth herbs with bitter juice. Leaves except in two kinds, opposite, sessile and entire. Flowers large and handsome.

As many stamens as there are lobes to the corolla, and alternating with them. Two stigmas or branches to the style. One-celled pod with many seeds on the walls.

FIVE-FLOWERED GENTIAN.—Slender and branching. Leaves lance-ovate. Corolla light-blue with five-pointed petals.

SOAPWORT GENTIAN.—The corolla is light blue, more open and more bell-shaped. Its petals short and broad. Otherwise much like the five-flowered Gentian.



FRINGED GENTIAN.

WHITE GENTIAN.—Lance-ovate leaves, the base heart-shaped and clashing. Corolla dull white or yellow with the petals longer than the plaits.

SABBATIA.—Simple, opposite, sessile leaves. Petals in the bud overlap. Wheel-shaped corolla—five to twelve parts. In chymes. White or pink. Two-parted style.

FLOATING HEART.—Simple alternate leaves, from the root. Round-heart shaped. These float on the water. Long-footed stalks which have at their summit a cluster of small white flowers. With these are odd-looking spur-shaped bodies. Corolla five-parted.

BUCKBEAN.—Leaves in three leaflets. Long foot-stalks, their base forming a sheath for the root-stalk. A Raceme of white flowers. Corolla five-parted, the petals white-bearded within. One kind found in bogs,

FRINGED GENTIAN. — Leaves lance-shaped.

Flowers single, on a naked stalk. Corolla a rich blue, with beautifully fringed lobes. Grows in low places, rather rare, and closes in the afternoon.

CLOSED GENTIAN.—Stout, leafy whole length of the stem. Flowers in clusters. Corolla blue, the mouth closed; five fringe-toothed plaits.

LEGEND OF THE GENTIAN.

The Closed Gentian never opens. The fringed Gentian closes in the afternoon. There is a little story that accounts for the difference in these Gentians.

Once the Queen of the Fairies was out late at night. The midnight hour had passed, and the Silver Moon, the Fairy Lamp, had swung down and out of sight. Hurrying to a Gentian, the Fairy asked for shelter. "Who are you, that you disturb me at this hour o' night?" called the sleepy Gentian.

"I am the Queen of the Fairies," cried the belated little lady.

"Very well, then, if you are the Queen of the Fairies you can find places enough to sleep. Go away and let me sleep."

Poor little Fairy Queen! She was afraid out in the big, dark world.

"I will try again," said she. And so going up to another Gentian not far away, she timidly said, "Can you give shelter to a tired wayfarer, good flower?"

Out peeped the Gentian. "Poor little lady," said the flower. "Whoever you are, you are too little to be out in the dark. Come in and let me cover you over till the Sun comes."

Then the little tired Fairy slept soundly until morning began to dawn. Then, as she hastened away in the dim light, she said, turning to the flower that had protected her, "You, kind friend, you and all your children shall hereafter be distinguished from all other Gentians by the power which I now give you to open and receive the warm sunlight when first he peeps upon the world."

FRINGED GENTIAN.

Thou blossom, bright with autumn dew,
And colored with the heaven's own blue,
That openest when the quiet light
Succeeds the keen and frosty night;

Thou comest not when violets lean
O'er wandering brooks and springs unseen,
Or columbines, in purple dressed,
Nod o'er the ground-bird's hidden nest.

Then doth thy sweet and quiet eye
Look through its fringes to the sky,
Blue — blue — as if that sky let fall
A flower from its cerulean wall.

Thou waitest late, and comest alone,
When woods are bare and birds have flown,
And frosts and shortening days portend
The aged year is near his end.

I would that thus, when I shall see
The hour of death draw near to me,
Hope, blossoming within my heart;
May look to heaven as I depart.

—BRYANT.

NIGHT-SHADE FAMILY.

This family is a blessing to the sick and a blessing to the doctors. I don't know what they would do without it. This family has a bitter, disagreeable taste, and is often poisonous.

To this family belong the Tomato, Red Pepper, Apple-of-Peru, Petunia, Tobacco, as well as many others from which medicine is made.

Of the Night-Shade, there are several kinds. Herbs or shrubs. Colorless, bitter, sometimes poisonous juice. Alternate leaves. Regular flowers with five stamens, one pistil. Ovary two or more celled. In the bud the petals are edge to edge.



TOBACCO.

1, Branch of tobacco plant; 2, section of flower; 3, fruit; 4, section of fruit; 5, single flower.

DEADLY NIGHT-SHADE.—Has a bell-shaped corolla, curved stamens. The fruit is a black-berry. It is deadly poison.

PETUNIA.—Funnel-shaped corolla, unequal stamens and fruit a pod.



BERRY OF BELLADONNA.

TOBACCO.—Calyx is not angled. This calyx remains above a smooth pod which opens by several slits above.

STRAMONIUM.—A five-angled calyx which falls away when the flower dies. A large prickly pod, two-celled at first and then four-valved. A regular corolla, generally long and funnel-shaped.

HENBANE.—A funnel-shaped corolla or bell-shaped; dull color. Irregular stamens. An urn-shaped calyx containing the pod. Pod opens by a lid.

MATRIMONY VINE.—Shrubby, rather vine-like. Narrow leaves. Fruit a berry. A funnel-shaped corolla. A five-parted calyx.

APPLE OF PERU.—A dry berry. A five-parted calyx, parts heart-shaped. Corolla somewhat wheel or bell-shaped.

GROUND CHERRY.—Calyx five-parted, ripening into a little bladder-like bag around the berry. Corolla somewhat like the Apple of Peru.

NIGHTSHADE.

COMMON NIGHT-SHADE.—Low and many-branched. Grows in dark, damp places. Leaves ovate, many-toothed; small white flowers; black berries, said to be poisonous.

This poisonous plant was a favorite one with the witches.

In an old witch song, written by an early author, the witch sings:

“ And I ha’ been plucking plants among
Hemlock, Henbane, Adder’s Tongue;
Nightshade, Moonwort, Libbard’s bane,
And twice, by the dogs, was like to be ta’en.”

BITTER SWEET.—Shrubby stem. Climbing leaves, heart-shaped, sometimes ear-like at base. Flowers in cymes. Berries red. Called also Woody Night-shade.

JERUSALEM CHERRY.—A low tree-like shrub. Long, smooth, entire leaves. White flowers scattered, ripening into a bright red berry.



POTATO BLOSSOM.

POTATO.—We usually know only of the root of this plant. But it has a very pretty white or blue flower.

TOMATO.—The corolla is wheel-shaped and the stamens converge or are united around the style. The fruit is a berry. The stamens have very short filaments with much longer anthers, which are connected with each other and open lengthwise. The berry has several cells.



NIGHTSHADE.

NIGHT-SHADE.—The corolla is wheel-shaped, and the anthers of the stamens are longer than the filaments, but are not joined. They open by two pores at the top.

CAPSICUM.—The corolla is wheel-shaped. The anthers are not so long as the filaments and are heart-shaped and separate, and open lengthwise. The berry is like a puffed-up pod and the pulp is pungent.

It is commonly known as the Red Pepper.

EGG-PLANT.—The leaves are downy, somewhat lobed or wavy, and ovate-shape. The berry is oblong, whitish or purple, and grows from the size of an egg up to a melon. Eatable if cooked.

HORSE-NETTLE.—This is a weed with hairy wavy-toothed, oblong or ovate leaves. The corolla of the flower is bluish. The berry is yellow.

HISTORY OF THE POTATO.

Did you ever hear how the Europeans came first to know of the potato and to use it for food?

In a child's history of America I find this paragraph from a story:

"They found some very strange people as they sailed along the coast of South America, who, so Magellan said, were ten and twelve feet tall. These people were unusually tall, but it is hardly likely they were quite as tall as Magellan and his men said. Sailors, in those days, liked to tell very big stories, I think, just as they do now.

These natives of South America were as surprised to see the white men as the white men were to see them. The natives could not understand how such little men could make such big ships move, and they thought the boats must be the babies of the ships.

They pulled from the ground, and gave to the white men to eat, something which Magellan and his men said looked like turnips and tasted like chestnuts. The sailors ate them eagerly without cooking, and carried some of them home to Spain as great curiosities. Do you guess what they were? Nothing but common potatoes, which are eaten now everywhere, but which then were known only to the Indians."

DOGBANE FAMILY.

These plants have milky, bitter juice, and a tough inner bark. The leaves are nearly opposite and entire. Flowers regular. Corolla five-lobed, the lobes convolute in the bud. The stamens on the corolla are alternate with its lobes. Fruit two separate pods.



OLEANDER.

OLEANDER.—Funnel-shaped corolla and a wheel-shaped five-parted border. One style. Leaves whorled. Large rose-colored blossoms.



DOGBANE.

DOGBANE.—A spreading kind has the branches of its low stem far apart. Leaves ovate. Flowers

few in cymes. Lobes of corolla recurved. Tube shorter than the calyx.

Another kind—Indian Hemp—has stem and branches erect. Lobes of the corolla not recurved, and the tube not longer than the calyx.



VINCA (PERIWINKLE).

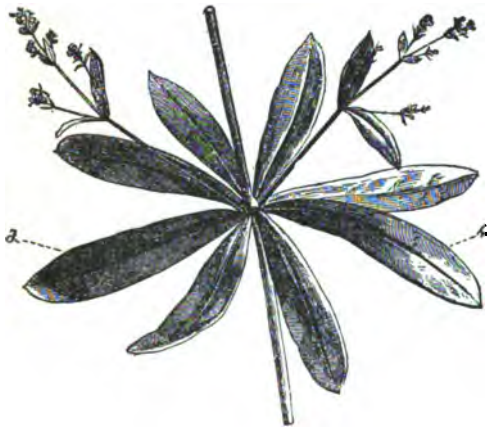
PERIWINKLE.—Leaves opposite, evergreen, in the common wild species. Funnel-shaped corolla with wheel-shaped border.

AMSONIA.—Alternate leaves, very narrow. Erect herbs with pale-blue, salver-shaped flowers. Seeds not tufted. Corolla like the Oleander and Periwinkle.

SPREADING-DOGBANE.—The branches of the low stem spread widely. The leaves are oval or ovate. The cymes are few-flowered. The corolla lobes are recurved and the tube is shorter than the calyx.

MILKWEED FAMILY.

Plants with milky stalks, tough bark like the Dogbane; but this plant has flowers in umbels five short stamens all joined in a ring, anthers fast sticking or grown to the stigma, and the pollen in a tough waxy mass. The flowers are curious. But you had better just now be content to look at them; they are too hard for you to try to analyze.



MILKWEED.

MILKWEED.— Corolla five-parted. Each little stamen has a hood with a horn in each.

GREEN MILKWEED.— Like the milkweed only it has no horns in the hoods.

JESSAMINE FAMILY.

This has no wild species. A garden plant is the jessamine. A shrubby climbing plant with opposite leaves. Perfect flowers with salver-shaped corolla.



JESSAMINE.

LILAC (*Syringa vulgaris*.)

a, sprig of blossom; b, blossom; c, the same in section; d, stamen; e, seeds; f, section of seed.

OLIVE FAMILY.

Shrubs or trees. Opposite leaves. Four-lobed corolla. The ash has no petals. Ovary two-celled. Fruit one-celled, one-seeded, and is either a stone-fruit as in the Olive and Fringe-tree; a berry as in the Privet, a pod as in the lilac; or a key as in the Ash. Ovary two-celled, with two ovules hanging from the top of the cell. Petals in bud, edge to edge.

LILAC.— The corolla is salver-shaped with a long tube and four lobes. The flowers are perfect and form a thick panicle. The leaves are simple and entire. The fruit is a flat pod and contains four seeds.

PRIVET.— The leaves are simple, and flowers perfect. The corolla is funnel-shaped with short

tube. The berry is one or two-seeded. It is a low shrub.

FRINGE TREE.—It is a low tree or shrub with simple leaves and slender drooping panicles of white, delicate blossoms. The corolla has four long, narrow petals, which just unite at the base. The fruit is a one-seeded drupe.

ASH.—It is a tree with opposite pinnate leaves. The calyx of the flower is very small; sometimes there is none. There is no corolla. The stamens are generally but two, very seldom three or four. The fruit is winged at the top or else all around, is key-shaped, and contains one seed.

LILAC.

COMMON LILAC.—The leaves are rather heart-shaped. The flowers are lilac or white and bloom in spring.

PERSIAN LILAC.—The leaves are oblong or lance-shaped and the flower clusters are more slender than those of the common Lilac.

ASH.

WHITE ASH.—The shoots and stalks are smooth. The leaflets are pale and either smooth or downy on the under side. There are sometimes seven or nine leaflets.

RED ASH.—The shoots and stalks are velvety. The leaflets from seven to nine are downy on the under side. The body of the key is two-edged and acute at base with a long, narrow wing.

GREEN ASH.—The leaves and stalks are smooth. The leaflets, five to nine, are green both sides. The fruit in the form of a key, is like that of the Red Ash.

BLACK ASH.—The leaflets are from seven to eleven and are oblong, lanceolate, have no foot-stalk, taper to a point and are green both sides. The flowers are fertile and without a calyx.

BLUE ASH.—The branchlets are square. The leaflets are lance-ovate and have short stalks. From seven to nine leaflets.

THE LILAC.

The sun shone warm, and the lilac said,
"I must hurry and get my table spread,
For if I am slow, and dinner late,
My friends, the bees, will have to wait."

So delicate lavender glass she brought
And the daintiest china ever bought,
Purple tinted, and all complete;
And she filled each cup with honey sweet.

"Dinner is ready!" the spring wind cried;
And from hive and hiding, far and wide,
While the lilac laughed to see them come,
The little gray-jacketed bees came hum-m!

They sipped the syrup from every cell,
They nibbled at taffy and caramel;
Then, without being asked, they all buzzed: "We
Will be very happy to stay to tea."

—CLARA DOTY BATES.



POLYPETALOIDS.

CROWFOOT FAMILY.

Such a large family! These plants have *all their parts separate* and these parts are *inserted on the receptacle*. Often there are no petals, or they are queer-shaped.

Many stamens and many pistils. Compound, or at least, much-parted leaves. Fruit becomes pods or berries. No stipules. In Larkspur, Baneberry, and Bugbane there is *one pistil*. The pistils are entirely separate, except in the Fennel-flower.



VIRGIN'S-BOWER (CLEMATIS).

CLEMATIS.—They are climbing plants, with opposite, generally compound leaves. They have no real petals. The edges of the sepals turn inward in the bud.

HEPATICA.—They are not climbing plants and the leaves are alternate. The sepals overlap in the bud and are colored like petals. There are three leaves under the flower which resemble the calyx, or take its place. There are several pistils which become akenes in fruit. The akenes one-seeded.

ANEMONE.—The flowers are single on long, naked stalks and have no little leaves at their base, and are without a calyx.



ANEMONE.

MEADOW-RUE.—The flowers form a simple umbel or small panicle. In other respects like the anemone.

CROWFOOT.—The flowers have both calyx and corolla. The sepals fall off early. The flowers are small and form a compound raceme, or panicle.



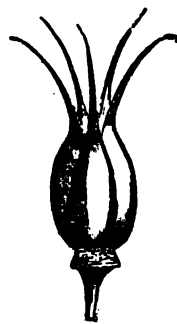
CROWFOOT (BUTTERCUP.)

MARSH-MARIGOLD.—The leaves are not cut but are rounded and yellowish. The sepals are golden-yellow, and are formed like petals. The pistils are more than one-seeded, and become pods in fruit.



MARSH-MARIGOLD.

GOLDTHREAD.—Three leaflets. Flowers white. Many pistils each with stalk of its own. Sepals petal-like, pistils of more than one seed.

FENNEL FLOWER.
(NIGELLA OR LOVE-IN-THE-MIST.)PISTIL OF FENNEL
FLOWER.

GLOBE FLOWER.—Leaves are deeply cut. The petals are stamen-like, yellowish. Otherwise like the preceding.

COLUMBINE.—The pistils are from two to five and separate, sometimes there is but one pistil. The sepals are five and all alike. The petals are five and formed like large spurs.

FENNEL FLOWER.—Blue, purple or red; rarely white. Pistils not stalked, five in number. United in a bladder-like pod.

ACONITE.—The petals are only two. There are five sepals not alike—the upper one is hood or helmet-shaped.

BANEERRY.—The sepals are petal-like and fall off when the flower opens. The petals are very small or none at all. The flowers are in a short raceme. There is one pistil which forms a berry.

BUGBANE.—The flowers are in a long raceme. The sepals are like those in the Baneberry. The fruit is a dry pod.

PEONY.—The sepals are leaf-like and do not fall off. The petals are large and showy.



WILD-VIRGIN'S BOWER (*Clematis*.)



LARKSPUR.

LARKSPUR.—The sepals are five and not alike. The upper sepal is shaped like a long spur. The petals are four. The flowers are irregular.



ANEMONE.

VIRGIN'S BOWER (CLEMATIS.)

Four petal-like sepals. Edges do not overlap, but rather roll inward. No real petals. Fruit akenes, the style making a long feathery tail.

WILD-VIRGIN'S BOWER—The leaflets are three and toothed. The flowers are white and in panicles. The seed-like fruit or akenes have long, feathery tails.

SWEET-VIRGIN'S BOWER.—The flowers are white and in panicles. The leaflets are entire and either five or nine.

VINE-BOWER.—The flowers are single. The sepals are large and purple. The fruit is short-tailed and naked.

ANEMONY.

There may be from five to fifteen petal-like sepals. No leaves beneath. Flowers on long, naked footstalks. No real petals. Short-pointed akenes. These are smooth—that is, not ribbed or grooved. Upper stem leaves arranged in whorls. Woods and low meadows.

This Anemony is a "Fairy Flower;" as proof of it, in some parts of England the simple village poets will call your attention to the delicate purplish or pinkish veining. "Who but Fairies could paint such delicate lines as these?" they will ask. And sure enough—who could?

VIRGINIAN ANEMONY.—The principal leaves grow on a long footstalk in whorls of three leaves. They are hairy and three-parted and cut-toothed. The middle flower-stalk is leafless while the others have two leaves in the middle and new ones rise from their axils producing blossoms all summer. The sepals are acute and of a greenish-white color. The pistils are numerous and form an oval, woolly head.

LONG FRUITED ANEMONY.—The stem-leaves are many in a whorl. The leafless flower-stalks are from two to six and grow very long. The sepals are blunt. The head of fruit is an inch long. In other ways it is like the Virginian Anemony.

PENNSYLVANIAN ANEMONY.—They are hairy plants. The stem-leaves are sessile. The main ones are three in a whorl. But the side-flowering branches have only a pair of small leaves. The sepals are large and white or purplish. The flat akenes are many in a head.

GROVE ANEMONY.—These are smooth, low, and only one-flowered. The stem-leaves grow three in a whorl on a long footstalk and divide into three or five leaflets. The sepals are white or purplish and the akenes (which are from fifteen to twenty) are narrow.

HEPATICA (*Liverwort*.)**HEPATICA.**

Six to twelve petal-like sepals. There is a little whorl of leaves just beneath, which at first glance looks like a calyx. Many pistils. Pointed akenes. Found as low herbs in early spring — in woods.

ROUND-LOBED HEPATICA.—The three lobes of the leaves are rounded and blunt. The calyx has from six to twelve petal-like sepals and is often taken to be the corolla as there is underneath it a whorl of little leaves which looks like a calyx. There are no real petals. The pistils are several and form naked-pointed akenes. The single flowers grow on scapes. They are blue or purple or nearly white.

SHARP-LOBED HEPATICA.—This is like the Round-Lobed Hepatica, only the lobes of the leaves are from three to five, and acute.

MEADOW-RUE.

Four or more greenish, petal-like sepals. No real petals. Four to fifteen pistils, which

make ribbed or grooved akenes. The Anemomy Meadow Rue is almost an Anemomy — except for the ribbed akenes. (See Anemone.) Perfect flowers in an umbel. The Early and Late Meadow Rue have not perfect flowers, and these are arranged in panicles. Decompound leaves.

ANEMONY MEADOW RUE — These are low and delicate, and generally grow with the Grove Anemomy. The sepals are from seven to ten, white or pinkish like the Grove Anemomy. The stem-leaves grow in a whorl at the top.



HEPATICA.

EARLY MEADOW RUE.—This plant grows one or two feet high in woods. The leaves grow alternate, and the rounded leaflets have from five to seven roundish lobes. The flowers are greenish, in early spring.

LATE MEADOW RUE.—This is very much like the Early Meadow-Rue, but grows from three to six feet high, and the leaflets are three-lobed and the flowers white, in summer.

CROWFOOT.

Sepals fall early. Five sepals — five flat petals. Akenes many, arranged in a head.

WHITE WATER CROWFOOT.— The leaves are made up of many little thread-like divisions. The five sepals fall off early. The petals are generally five and flat. The akenes are flat and many in a head. The petals are white with a round spot at the base. The herbage is all under water.

YELLOW WATER-CROWFOOT.— This is very much like the last, but it is larger every way, and the flowers are yellow. The upper leaves are often out of water, and much less cut.

SMALL-FLOWERED CROWFOOT.— These plants are smooth and slender and erect. The petals are often shorter and just the same length as the calyx. Not growing near water, but in wet places. Petals often shorter than the calyx.

CURSED CROWFOOT.— This is like the Small-Flowered Crowfoot, but stouter, and all the leaves are cleft or lobed. The head of fruits is oblong. Not growing in water but in wet places. Petals often shorter than the calyx.

HOOK-BEAKED CROWFOOT.— This is a hairy plant. The leaves are three-cleft, with the lobes broad. The akenes have long hooked beaks collected into a round head. Not growing in water but in wet places. Petals often shorter than the calyx.

BRISTLY CROWFOOT.— These plants are stout, with bristly hairs. The leaves are divided into three or five-stalked leaflets, which are cut again into narrow lobes. The akenes are straight-beaked in an oblong head. The petals are much shorter or the same length as the calyx, growing in damp places.

EARLY CROWFOOT.— These grow from four to nine inches high. The root-leaves are nearly pinnate. The petals are narrow and much longer than the calyx. Grows in dry places.

CREeping CROWFOOT.— The stems are reclining, and make long runners in summer. The leaves are variously divided. The petals are obovate, and longer than the calyx. It grows in wet places.

BULBOUS CROWFOOT OR EARLY BUTTERCUP.— There is a *solid bulb* at the base of the erect stem. The leaves are divided and cut. The petals are large, round and bright yellow. Grows in meadows — dry ground. Petals longer than calyx.

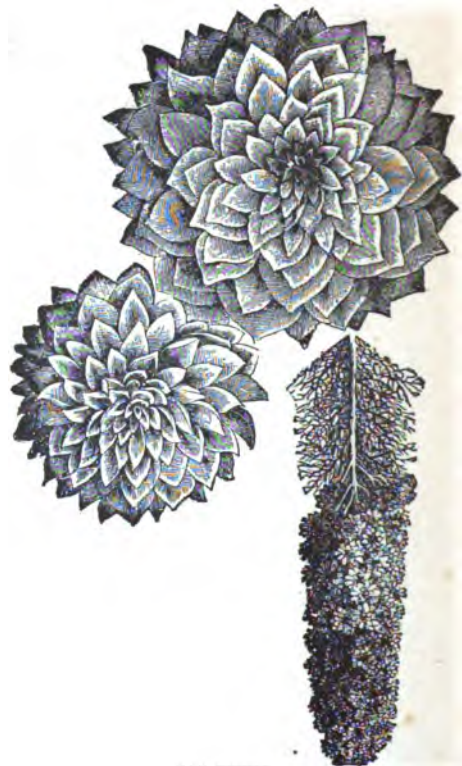
THE CROWFOOT or LATER BUTTERCUP.— The stem is erect and from two to three

feet high with no bulb at the bottom. The leaves are cut and divided and the petals are obovate, bright-colored, but not so large as the Early Buttercup. Petals longer than the calyx.

GLOBE-FLOWER.

EUROPEAN GLOBE-FLOWER.— The golden-yellow sepals ten to fifteen, converge, making a sort of globe-shaped flower. The petals are within, small and look like larger stamens, being longer than the real stamens. The nine or more pistils form a several-seeded pod.

AMERICAN GLOBE-FLOWER.— The sepals are five or six, pale greenish-yellow and spreading. The petals are liable to be overlooped, being shorter than the stamens. These look like very large Buttercups.

LARKSPUR.**LARKSPUR.**

COMMON OR FIELD LARKSPUR.— The flowers are scattered and on spreading branches. The petals are united into one body. The leaves are finely cut. The pods are smooth.

ROCKET OR AJAX LARKSPUR.—This is quite like the Field Larkspur but the flowers are crowded in a long close raceme. The pods are hairy.

GREAT-FLOWERED LARKSPUR.—The leaves are cut into linear distant lobes. The four petals are separate. The pistils are from two to five. The pods are downy.

BEE LARKSPUR.—This is quite like the great flowered Larkspur, but the leaves are cleft into from three to seven wedge-shaped and cut-toothed lobes. The petals are bearded.

TALL WILD LARKSPUR.—The stem grows from two to five feet high. The leaves are parted into three or five wedge-shaped pointed divisions. The flowers are many in a long raceme and a blue-purple color.

DWARF LARKSPUR.—The stem is one foot or less high. The flowers are large, loose and not many, and of a purple-blue color.

AZURE LARKSPUR.—These are like the Dwarf Larkspur, but the leaves are parted into narrow linear lobes. Flowers sky-blue, and many in a close raceme.



COLUMBINE.

Five petal-like sepals, all alike.
Five hollow-spurred petals. Five

pistils. Leaves compound — leaflets three.

COLUMBINE.



WILD COLUMBINE.

COLUMBINE.

WILD COLUMBINE.—The flowers are scarlet, but yellow inside, and nodding. The five sepals are petal-like and all similar. The five petals form large, hooked, hollow spurs. The five pistils make a many-seeded pod. The leaves are twice or thrice compound and the leaflets are in threes.

GARDEN COLUMBINE.—This is like the wild columbine, but the flowers are blue, purple or white, with straight spurs.

ACONITE (MONKSHOOD).

Five petal-like sepals *not alike*. The upper one forms a sort of hood—hence the name sometimes given the plant of Monkshood. Petals two—strange shaped, a hammer-shaped little blade on a long claw standing under the hood. Pods as in the Larkspur. Flowers in racemes or panicles. Blue, purple, varying to white. Roots and herbage poison.

GARDEN ACONITE—The leaves are parted into linear lobes. The stem is rather stout, erect and leafy. The flowers are blue or purple and varying to white and crowded into racemes or panicles. The sepals are five and petal-like with the upper one forming a hood or helmet. The two petals are small and oddly shaped with a curved hammer-shaped blade on a long claw.

WILD ACONITE.—This is quite like the Garden Aconite but the stem is weak and bending as if to climb. The leaf-lobes are lance-ovate. The flowers are scattered,

MAGNOLIA FAMILY.

Trees or shrubs. Strong scented and bitter tasting. Simple alternate leaves. Large thin stipules covering the buds; these, however fall early. Large single flowers at the end of branches. Leaves in threes. Sepals three, colored like petals. Six petals in two rows, or nine in three rows. Edges overlap in the buds. Many stamens on a receptacle. Long anthers up and down the sides of the filaments. Pistils packed close and seeming grown together, one above the other, forming a cone.

TULIP TREE.—Flat stipules. Petals, six greenish-orange. Slender filaments. Pistils over-lying and grown together into a spindle-shaped cone. Leaves three-lobed, looking as if cut off at the end.

Under Magnolia we have

LAUREL MAGNOLIA.—Leaves thick, evergreen in the Southern States. Silky buds. Globe-shaped flowers, very fragrant.

CUCUMBER TREES.—Thin leaves scattered along the branches. Downy beneath. Silky buds. Flowers not large nor sweet-scented.

UMBRELLA TREES.—Thin leaves, large. Those on the flowering branches forming an umbrella-like circle under the blossom. Smooth leaf-buds. Large white flowers, not sweet-scented.

CUSTARD APPLE FAMILY.

The Family resembles somewhat the Magnolia Family; but the petals do *not overlap* in the bud, the bark and the foliage are not sweet-smelling; the seeds are large and bony. Leaves entire, *without stipules*.

COMMON PAPAW.—Common West and South in rich soil along the river. It is a small tree with purple flowers, which appear early in spring, before the leaves. The three outer petals larger than the three inner. Bark bad tasting.

MOONSEED FAMILY.

Woody climbers. Fruit with moon-shaped seed. Alternate leaves. Sepals and petals, four, five or six—all same color. A few one-seeded pistils.

MOONSEED.—Stamens twelve to twenty. Pistils two to four. White flowers. Leaves rounded and angled and shield-shaped. Fruit blue-black. Common in the North.

COCULUS.— Stamens six, one before each petal, Greenish flowers. Leaves heart-shaped.

BARBERRY FAMILY.

Distinguished by having *sepals and petals in fours, sixes or eights, the stamens as many as the petals, one before each petal*. Anthers open by uplifted doors. One pistil. Berries.

BARBERRY.— Shrubs. Yellow bark and yellow flowers. Stamens and pistils six. Simple leaves in odd little clusters above a thorne. This thorn was a leaf the year before. Berries, red and sour.

MAHONIA.— Leaves scattered, pinnate, evergreen. No thorns. Berries, blue.

COHOSH.— Herbs. Roots perennials compound or deeply-lobed leaves. Flowers yellowish-green. Small stamens and petals six.

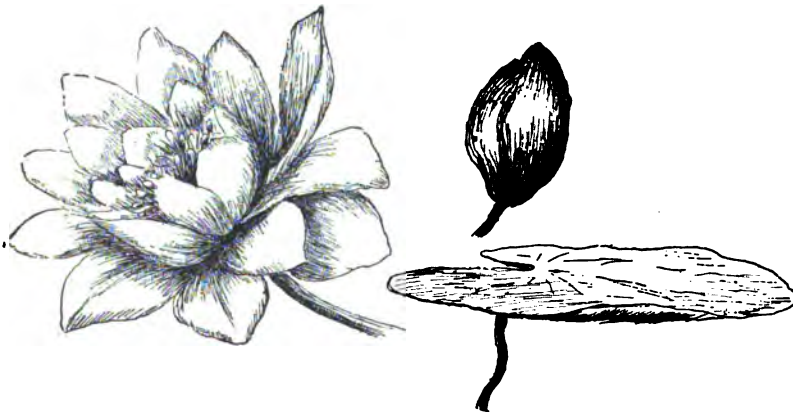
TWINLEAF.— Large, white flowers. Eight narrow petals and eight stamens. Scape with one flower. Leaves, two-parted and rising separately from the ground. The first is a many-seeded pod which opens with a lid.



COMMON BARBERRY.

1, spray of Barberry; 2, flower; 3, petal; 4, closed anther; 5, open anther; 6, berry.

MAY APPLE.— Stamens, twelve to eighteen. Rounded petals. Flowering stem, shield-shaped, and several cleft leaves. A large nodding flower in a fork of the branches.



WATER-LILY.

WATER-LILY FAMILY.

WHITE WATER-LILY.— Sweet-smelling. Leaves and flowers from very long, thick, rubbery root-stalks. Many petals, many stamens

which gradually blend in one compound pistil. Found on the top of the water.

DRAWINGS.



LOTUS (*Water Lily Family.*)

YELLOW POND-LILY.—Leaves and flowers grow from long root-stalks. Sepals, five or six, rounded, somewhat petal-like and yellow. Inside is a mass of square-topped bodies which really answer for petals. A broad, flat-topped pistil.

You will find that all these water-lilies have little hollow tubes for pipes through which to suck up the water. Their leaves, too, are little floats.



YELLOW POND-LILY.

WATER-SHIELD.—Leaves and dull purple flowers, rising by a slender stem from the water. Leaves fastened by the middle of the underside—like a Japanese umbrella.

NELUMBO.—Many sepals, stamens, petals, all falling off under the pistils. Twelve pistils embedded in the flat surface of a top-shaped receptacle. Leaves attached like the Water-shield. Leaves, cup-like, rising with the great, greenish-yellow flowers out of the water.

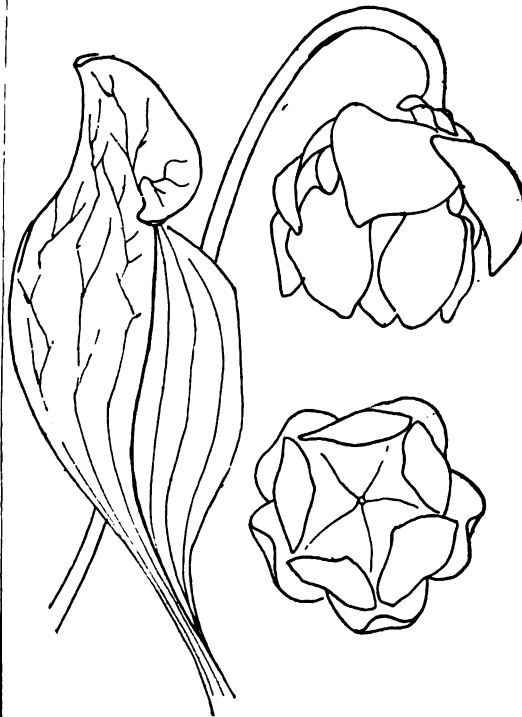
SIDE-SADDLE FLOWER FAMILY.

What children call "Monkey Pitchers." They are bog plants, with trumpet-shaped or pitcher-shaped leaves. The flower has an umbrella-shaped style. The pitchers of these plants hold water, to which in the dry times of summer, the thirsty birds are glad to come.

Those in hot countries, so travellers say, are quite large, and the monkeys really do go to them for water. Many a story has been told of this plant by travellers, who, nearly dying of thirst, fortunately were saved by the contents of these little water-pitchers.

RED SIDE-SADDLE FLOWER.—The leaves are long and trumpet-shaped and have a narrow wing. The petals are red.

SPOTTED PITCHER PLANT.—The petals are yellow. The trumpet-shaped leaves are from twelve to eighteen inches long and have a hooded-top, white-spotted on the back, and a narrow side-wing.



PITCHER PLANT.

YELLOW SIDE-SADDLE TRUMPET.—The leaves grow from one to three feet high, are trumpet-shaped with an upright rounded top with sides turned back. The wing is very small. The petals are yellow and droop when old.

PURPLE SIDE-SADDLE FLOWER OR PITCHER PLANT.—The yellowish-green leaves are pitcher-shaped with a broad wing attached to the inner side and are veined with purple. The purple petals are arched over the pistils.

POPPY FAMILY.

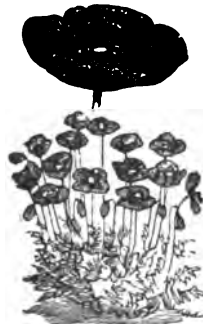
There are the common Poppy, the Prickly Poppy, and the Horn-root and the Blood-root. All of the Poppy family. Another one, too, with a hard name, *ESCH-SCHOLT-ZIA*, has a calyx that looks exactly like a candle extinguisher or a little pointed cap. And such a strong smelling juice!

BLOODROOT.—Petals are not crumpled, and the bud does not nod as the poppies do. Petals eight to twelve; narrow, white. Oblong pod. Orange-red or blood-colored juice.

POPPY.—Petals very much crumpled in the bud. Buds nodding. Pod has little cells in it filled with seeds. Covered over with a little flat cover which is not fastened down tight, but has little air-holes just beneath.



POPPY POD.



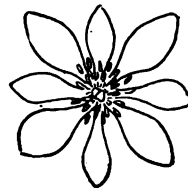
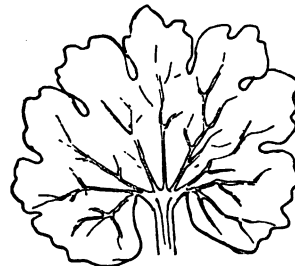
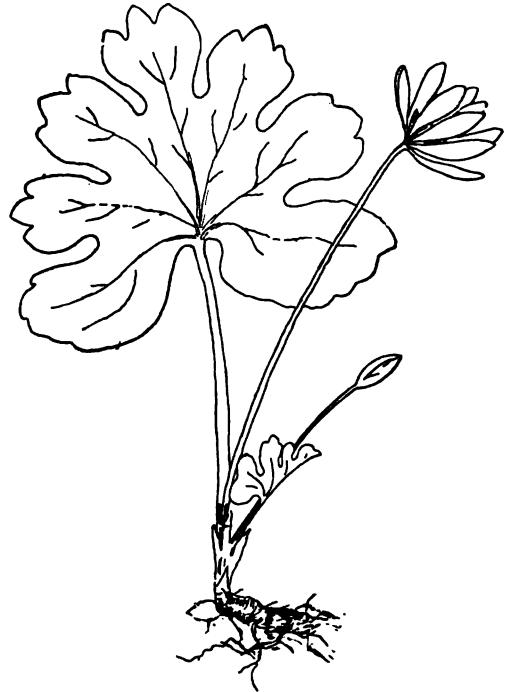
COMMON POPPY.

PRICKLY POPPY.—Ovary and pod are only one-celled and open by little valves. The placentas (seed-bearing lines) form a slender frame between them. The pod and leaves are prickly. Stigmas from four to six without any styles. The flowers are yellowish, but sometimes white.

CELANDINE POPPY.—The stigmas are three or four with styles. The ovary and pod are like those of the Prickly Poppy, only the pod is bristly.

CELANDINE.—This resembles the Celandine Poppy, but the pod is slender and smooth, and the stigmas are but two.

HORN POPPY.—The seed are embedded in a thick partition which separates the long narrow pod and the ovary into two cells. The stigma has two little horns.



BLOOD ROOT.

FUMITORY.

Tender herbs. Colorless juice. Alternate, compound leaves. Flowers irregular. Two scale-like sepals. A flattened, closed corolla made up of four petals grown together. The two outside with spreading tips; the two inner with spoon-shaped tips sticking together face to face.

SMOKE-VINE. — Heart-shaped flowers, or with a spur on each side of the base. Petals all joined in a heart-shaped corolla. This corolla dries and encloses a four-seeded pod. A delicate vine, with tendril-like leaves.

CORYDAL. — Leafy-stemmed biennials, with pinnate leaves and slender pods. They grow in rocky places and flower in spring and summer. The *Golden Corydal* has low-spreading foliage, hanging pods, and yellow racemed flowers. *Pale Corydal* has erect flowers and pod. Flowers purplish.



DICENTRA.

DICENTRA. — Or "bleeding heart." One kind of this is called Dutchman's Breeches. It has a white corolla tipped with cream-color and two very large spurs.

Another kind called Squirrel Corn has underground shoots, bearing little tube-like bodies which look like Indian corn. The kind we have in the gardens has the flowers in drooping racemes, one-sided. Flowers heart-shaped. Pink.

FUMITORY. — Ovary and fruit round and one-seeded. Flowers with a little spur on one side. Fruit does not open.



DUTCHMAN'S BREECHES.

DICENTRA.

Singular handsome flowers, growing in a one-sided raceme.

DUTCHMAN'S BREECHES. — Two large spurs. Corolla white, tipped with cream color.

SQUIRREL CORN. — Little underground shoots, having upon them little yellow tuber-like bodies looking like grains of yellow corn. Corolla white or flesh color. Flowers fragrant. Small, like hyacinths.

SHOWY DICENTRA — Drooping, one-sided racemes; flowers pink. A cultivated plant.

CORYDAL.

GOLDEN CORYDAL. — Low; spreading. Pods hang. Flowers in simple racemes.

PALE CORYDAL. — Upright. Purple or yellow flowers. Panicles. Pods are erect.

CRESS OR CROSS FAMILY.

The plants of this family are very bitter and acrid, to be sure; still their name, the Cross Family, does not refer at all to their dispositions this time. They are named the Cross Family because their four petals are arranged just opposite each other in the form of a cross.

In the pod is an odd little division to which the seeds are fastened, when by and by the pod snaps open and spreads apart.

There are many members in this family, but they are so very much alike that even a Botanist can tell them apart only by the difference in the seeds and pods. The Radish, the Turnip, the Cabbage, Mustard, Horse-radish, Pepper-grass, and many more belong to this odd family.

There are, besides, Sweet Alyssum, Wall-flower, the Nasturtium, Shepherd's Purse and Candytuft, garden plants that are familiar to us all.

RADISH—The pods are thick and fleshy when young but become hard and pointed like a beak when ripe and do not split open. The seeds are round. The flowers are pink or purple.

JOINTED-CHARLOCK—The flowers are yellow or turn whitish or purple. The pod is long and necklace-shaped.

TURNIP AND CABBAGE.—Have yellow flowers with the calyx erect in blossom. The roots, stems, leaves, etc., become fleshy. The pods end in a beak and open when ripe by two valves which fall off leaving a partition. Seeds are round.



WALL-FLOWER.

WALL-FLOWER—The pod is flat and does not end in a beak. The seeds are flat or oblong. The calyx is unequal having two pouch-shaped sepals. The flowers are yellow and orange.

MUSTARD.—This has an open, spreading calyx in blossom, but the pod and seeds are like the Cabbage and Turnip.

STOCK.—The pods are not flat and the backs of the stigmas are thickened. The seeds are flat. The flowers are purple, rose-color or white with an unequal calyx.

ROCKET.—The stigmas are pressed closely together. The calyx is unequal. Oblong seeds.

ROCK-CRESS.—The sepals of the calyx are alike or nearly so. The valves of the flat pod have a mid-vein or nerve. The flowers are white or purple.

BITTER-CRESS—This is like the Rock-Cress but the stem-leaves are alternate or scattered and the pod is without a nerve.

TOOTHWORT.—The pod is flat without a nerve. The roots are fleshy. The stem-leaves two or three whorled or clustered.

WINTER-CRESS.—The flowers are yellow. The sepals of the calyx are about equal. The pods are linear and have four bluntish sides.

HEDGE-MUSTARD.—The flowers are pale yellow, and the sepals are equal or nearly so. The pods are awl-shaped.

WATER-CRESS.—The calyx is the same as in the Winter-Cress. The pod is turgid, that is, rather thickened or swollen and is short-linear or oblong.

HORSE-RADISH.—The pods are many-seeded and shaped like a ball. It opens by two valves which fall off, leaving a partition.

FALSE-FLAX.—The pod is pear-shaped or rather flattish, many-seeded and opens as the pod of the Horseradish. The flowers are yellow.

WHITLOW-GRASS.—The many-seeded flat pod opens by two valves leaving a broad partition.

HONESTY.—The large flat pod has a broad partition and is stalked above the calyx. They have large purple flowers. Seeds two to four.

SWEET-ALYSSUM.—The pod is small with a broad partition and two-seeded. Flowers white and small.

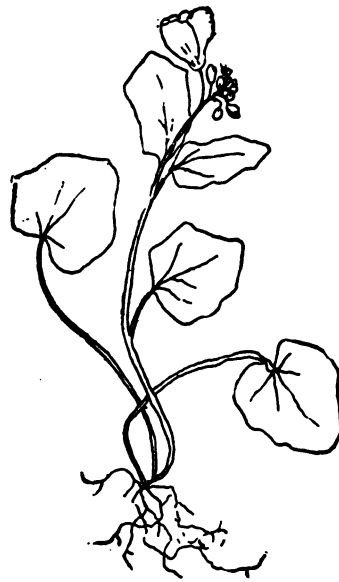
PEPPER-GRASS.—Pods are flattened just opposite to the narrow partition, and one seed in each cell. Flowers, small, white or purple, with petals all alike.

CANDYTUFT.—The two petals on the outer side of the flower larger than the other petals. Small white flowers. Seeds, one in each cell.

WOAD. It has yellow flowers. The pod is one-celled, one-seeded and wing-like, and does not open when ripe.



SWEET ALYSSUM.



ROCK-CRESS.



HEDGE-MUSTARD.



PODS AND BLOSSOMS OF CHARLOCK.



WALLFLOWER (*Cheiranthus Cheiri*.)
a, plant; b, stamens; c, pod.



SHEPHERD'S PURSE.



MUSTARD.

SHEPHERD'S PURSE. — Flowers purple or white. The pod is inversely heart-shaped and three-angled, with a shallow notch and flattened contrary to the narrow partition.

SEA ROCKET. — The pods are fleshy and do not open, but are jointed across the middle. The flowers are purplish.

CISTUS FAMILY.

Low shrubby plants. Showy corolla in Europe, which opens once. The petals fall off at sunset; but the only kinds we have in this country are homely, weed-like plants.

Our kinds have the following characteristics: Leaves alternate in some; calyx of 5 sepals, does not fall. Three of them large, other two small. Petals 3 or 5, overlap in the bud. Stamens 3 to 20, borne on the receptacle. One pistil. One-celled pod, seeds in three rows.

FROSTWEED.—Has five petals, falling after one day. No style. Petals crumpled in the bud.

HUDSONIA.—Has five petals, one slender style. They are little shrubs, with very small leaves, growing on sandy shores.

PINWEED.—Has three purplish petals which do not fall off. Very small flowers.

MIGNONETTE FAMILY.

We would hardly mention this family for this country were it not for its one representative, the sweet little Mignonette.



MIGNONETTE.

MIGNONETTE.—Sepals, four to seven, and green. Unequal petals, four to seven, the small blade cleft as if cut into many little slips. Stamens, ten or more, and turned to one side instead of standing erect in the blossom. Short, one-celled, dividing into three to six

horns at the top. Flowers in racemes or spikes.

The common Mignonette is low and spreading and of sweet odor. Cultivated.

The Dyer's Weed, so called because it is used in dyeing yellow, grows along the roadside. Stem is simple and erect. Sepals, four. Petals, four. Leaves broad and lance-shaped.

VIOLET FAMILY.

Five sepals, petals, and stamens. Lower petal unlike the others, having a little spur. Short, broad stamens, anthers somewhat united. Pistil, one. One-celled pod, with three rows of seeds on its walls. Stipules. Acrid juice.

ENGLISH VIOLET.—Leaves rounded or heart-shaped. Flowers, blue-purple. Very fragrant. Cultivated.



ENGLISH VIOLET.

COMMON BLUE VIOLET.—Flowers larger. Side petals bearded. Leaves on long, upright stalks. Edges rolled in when young, low ground.

HAIRY VIOLET.—Leaves on short stalks, flat on the ground. Like the common blue, only flowers are smaller.

ARROW-LEAVED.—Early leaves on short foot-stalks. Heart-shaped, or more arrow-shaped. Hairy — side petals all bearded. Flowers large for the size of the plant. Dry or moist ground.

BIRD'S-FOOT.—Leaves cut into five lobes. Lilac-purple, large, beardless. Moist, sandy soil.

BLAND VIOLET. Leaves, rounded or heart-rounded or heart-shaped. Petals beardless.

PRIMROSE-LEAVED.—Leaves oblong or ovate. Side petals seldom bearded.

LANCE-LEAVED.—Leaves, lance-shaped, erect, smooth. Petals, beardless. Yellow flowers.

ROUND-LEAVED.—Spread flat on the ground. Side petals, bearded. Brown streaks. Cold woods.

LONG-SPURRED.—Spur is nearly a half-inch in length — longer than the corolla itself.

MUHLENBERG'S.—Low runners. A stout, short spur. Wet woods. Pale Violet corolla.

PALE VIOLET.—Short spur. Lower petal, streaked.

CANADA VIOLET.—Tall. Petals, white above, violet-tinged below. Short spur.

DOWNY VIOLET.—Tall. Leafless below, and downy. Yellow with short spur.

HEARTSEASE OR PANSY-VIOLET.—Low. Upper leaves, oval; lower leaves, heart-shaped. All colors. In the wild, yellow, violet and purple. Called sometimes the tri-colored violet.



PANSIES.

POLLY'S PANSIES.

Polly's Pansies grow so large and fair,
Bright and fragrant, that we can but praise them.
"They're the finest anywhere:
Tell us, won't you, Polly, how you raise them?"

What's your secret, little girl?" Then Polly,
With a look half bashful and half-jolly,
Smiles upon her flowers, and bends above them:
"This is all the secret, I just love them!"
—IDA WHIPPLE BENHAM.

PANSY—AN ALLEGORY.

In a quiet dell there dwelt a little flower of exquisite beauty and fragrance. So modest was this little floweret that it sought the most retired spot of the glade for its home, blooming in its richest colors beneath the shadow of some tall leaf. But it was not long to bloom thus. One day, an angel on a mission of love to this earth, passed its hiding-place, and brushing aside the Plantain leaf with her wing, there discovered the flower.

"Ah!" she cried, as she bent over to inhale its fragrance, "thou art lovely, indeed, too lovely to dwell here in solitude alone. I will breathe upon thee and thou shalt have an angel's face. Thou shalt go forth and bloom in every land, and carry with thee sweet thoughts of love and of heaven. Thou shalt grow in beauty; the splendor of thy varied dress shall be a marvel and a joy to all that behold thee."

Sealing her promise with a kiss, the angel departed, leaving the imprint of her fair face upon the floweret.

Thus it is that the Pansy has become a herald of joy throughout the land, and even to all civilized people everywhere. In the garden of the quiet country home she has her place, and is tended with loving care. In the crowded city mart you see her beaming face, and she smiles so sweetly that not one in that passing throng can resist her.—I. L. M.



PINKS.

PINK FAMILY.

Herbs with opposite leaves, not dotted. Stems larger at the joints. Flowers, regular, in fives, *sometimes* in fours. Stamens never more than twice as many as the petals. Fruit, a one-celled pod. The Pink and the Chickweed are the two principal sub-families.

PINK.—The calyx has two or more scaly bractlets at the base. Styles are two.



COCKLE.

COCKLE.—Styles are five and the calyx has leafy lobes which are longer than the petals.

SOAPWORT.—Calyx without any bractlets, or naked and is even, and shaped like a cylinder. Two styles.

COWHERB.—Styles are two. The calyx is oblong and has five sharp angles.

CATCHFLY.—Calyx without any bractlets, and five-toothed. Three styles.

LYCHNIS.—It has five styles and the calyx has short teeth but not leaf-like ones.

A wonderful thing is a seed ;
The one thing deathless forever —
Forever old and forever new,
Utterly faithful and utterly true —
Fickle and faithless never.

Plant lilies, and lilies will bloom ;
Plant roses, and roses will grow ;
Plant hate, and hate to life will spring
Plant love, and love to you will bring
The fruit of the seed you sow.

CHICKWEED.

CARPET-WEED. — It is a prostrate annual weed. Petals missing. Pods are three-celled with many seeds.

CHICKWEED-MOUSE EAR. — Styles and petals five. The petals are notched at the end or parted or else two-cleft. The pod opens by ten teeth, and has many seeds in one cell. There are no little scales between the leaves.

CHICKWEED. — The pod is one-celled with several seed and splits into valves. The petals are like those of the Mouse Ear. The styles are three or four. Stipules between the leaves missing.

SANDWORT. — Styles are three, fewer than the petals. The petals are neither cleft nor notched but entire. Pod many-seeded in one cell. No little scales or stipules.

PEARLWORT. — Pods and petals are the same as in the Sandwort. The styles are the same number as the petals, four or five.

SAND-SPURREY. — The leaves have little scaly stipules at their base. The petals are purple and entire. The leaves are not whorled. There are three styles.

SPURREY. — The narrow leaves are in whorls and have little scales between them at the base. There are five styles.

PURSLANE FAMILY.

More or less fleshy herb. Entire leaves. Flowers open only in the sunshine. Less sepals than petals, a stamen before each one — or there are many stamens. One-celled pod. Seeds rising from the base of the cell.

PURSLANE. — Two-cleft calyx. Tube united with lower part of ovary. Petals opened only once. Stamens seven to twenty. Pods many-seeded, — opening like a box.

SPRING BEAUTY. — Calyx, two-parted, free from the ovary. Its few-seeded pod splits into three parts. A stamen before each petal. Opposite leaves. Just two leaves. Stem comes from a tuber. Rose-colored flower in a raceme. Open several days.

ST. JOHN'S-WORT FAMILY.

Herbs or low shrubs. Leaves opposite and dotted. Acrid juice. Bloom late. Four or five sepals, which do not fall off. Many stamens in clusters on the receptacle. Styles, two to five, usually separate. One-celled cradle, one-celled pod, with two to five seed-bearing lines or as many cells, and in each cell, in the angle, a line of seeds.

There are several kinds of St. John's-wort; the Large, the Small, the Shrub, the Common, the Corymbed and the Pineweed.



ST. JOHN'S-WORT.

1, branch; 2, essentials of the flower; 3, bud.

ST. PETER'S-WORT. — Sepals four, in two pairs, one large, other small. Petals four.

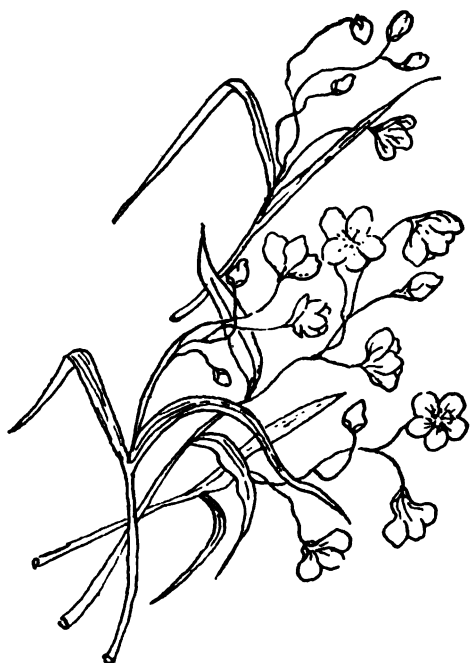
MARSH ST. JOHN'S-WORT. — Sepals five, all nearly alike in size and shape. Petals five. Flesh-colored, oval, equal. Stamens nine, in three sets. A thick gland between each set.

ST. JOHN'S-WORT. — Sepals five, nearly alike. Petals five, yellow, unequal. Many stamens.

GREAT ST. JOHN'S-WORT. — It is a perennial herb, with a branching stem from three to five feet high. Oblong leaves sitting closely to



CHICKWEED.



SPRING BEAUTY.



SPRING BEAUTY.

the stem, The narrow petals are an inch long. There are very many stamens, which are arranged in five sets. There are generally five styles, but occasionally six or seven.

SHRUBBY ST. JOHN'S-WORT. — It is a bushy shrub from one to four feet high. The branchlets are two-edged. The leaves are lance-oblong. The style splits into three when the flowers grow old.

NAKED-FLOWERED ST. JOHN'S-WORT. — It grows from one to four feet high, and is shrubby at the base. The branchlets have four sharp angles. The leaves are oblong. The flowers grow in naked, stalked cymes.

COMMON ST. JOHN'S-WORT. — It is a bushy-branched herb, one or two feet high. The stem somewhat two-edged. The leaves are narrow-oblong, with transparent dots. The sepals are lance-shape and the petals are bright yellow.

CORYMBED ST. JOHN'S-WORT. — The stem is terete, or long and round, from one to two feet high, and but a little branched. The oblong leaves and pale-yellow petals are generally dotted with black and transparent spots. Sepals oblong.

SMALL ST. JOHN'S-WORT. — It has leafy, spreading weak stems with oblong or ovate leaves, five-ribbed and partly clasping. The stamens are from five to fifteen, and the three styles short.

CANADA ST. JOHN'S-WORT. — The branches are erect, and the leaves are lance-shaped, or linear. The cymes are leafless.

PINE-WEED ST. JOHN'S-WORT. — The branches are wiry, and very slender and bushy. The awl-shaped leaves are very small and closely pressed to the branches. The small flowers are sessile and grow along the branches. The stamens and styles are the same as in the Canada St. John's-wort.

MALLOW FAMILY.

To this family, with others, belong the Mallow, the Hollyhock, and the Hibiscus.

HOLLYHOCK. — Anthers all at the top of a column of united filaments. Has a sort of small calyx outside a large one, which is six-parted. Separate pods. Plants tall and rather rough. Large short-stalked flowers, so close that the whole plant looks like a spike. Grows straight up, taller than a man often.



MALLOW.

MALLOW. — A three-leaved outside calyx. Petals notched. Many styles. Many little pods arranged in a ring around a central part of the pistil — looking like a little "cheese," as children call it.



HIBISCUS.

HIBISCUS. — Large flowers with an outside calyx of many little bracts. Stamens in a long slender column. Stigmas, five. Short, five-celled pod, which when ripe splits into five parts. Seeds smooth, sometimes hairy, never woolly. Showy herb or shrubs which blossom in the fall. These plants have mucilage in their roots which is extracted for use.



ABUTILON. (INDIAN MALLOW.)

MARSH-MALLOW.—The anthers are at the top of the column of united filaments. There is an outer calyx besides the real one, called an involucre which is nine-parted. The fruit-cells are in rings and separate whole when ripe. One seed in each cell. A soft downy plant.

LAVATERA.—The involucre or outer calyx is three or six cleft, and a flat plate covers the circle of the pods.

GLADE-MALLOW.—The small white flowers are dioecious—that is, some have all stamens and no pistils, while others have all pistils and no stamens. The racemes are rather drooping. There is no outer calyx. The pods are one-seeded.

SIDA.—The flowers are all perfect without an involucre. The pod has from five to fifteen cells, but with one seed in each cell. Flowers white or yellow.

INDIAN-MALLOW.—This is quite like the Sida, with perfect flowers and pods of from five to fifteen cells but there are from three to nine seeds in a cell instead of but one as in the Sida.

OKRA.—The anthers are attached on the sides of the upper part of the slender column. The long pod has three or five cells and when ripe splits into the same number of halves. The involucre is present and composed of many thread-like leaves. The calyx splits down one side when the flower opens.

COTTON.—The anthers are the same as in the Okra. The involucre is three, heart-shaped toothed leaves. The seeds bear wool.



ABUTILON. (INDIAN MALLOW.)

MALLOW.

LOW MALLOW.—The root is very long and the stem spreads on the ground. The leaves are scarcely lobed but have rounded teeth, or crenate, and are round, kidney-shaped, and on long stalks. The small whitish flowers grow grouped in the axil of the leaves. It is common in waste ground.

HIGH MALLOW.—The stem grows three feet high. The leaves are lobed, and the flowers are large and of a rose-purple color.

MUSK MALLOW.—They have a faint smell of musk. Grow two feet high and have large rose-colored flowers. The leaves are five-parted and the divisions are cut into linear lobes.

CURLED MALLOW.—The stem is from four to six feet high. The leaves are toothed, round and curled around the edges. The small white flowers are sessile in the axils.

HIBISCUS.

SHRUBBY, OR ALTHAEA HIBISCUS.—This shrub grows from five to ten inches high. The leaves are wedge-ovate and three-lobed with the lobes toothed. The purple, red or white flowers grow single or double on a short stalk.

GREAT-RED HIBISCUS.—A smooth herb growing eight feet high, from a perennial root. The leaves are deeply cleft into five lance-linear lobes. The red corolla is from eight to eleven inches broad.

HALBERD-LEAVED HIBISCUS.— It is a smooth herb growing six feet high from a perennial root. The lower leaves have three lobes and the upper are halberd-shaped. The calyx grows bladdery after flowering and the corolla is flesh-colored and three inches long.

MARSH HIBISCUS.— This is the same kind of plant as the Halberd-leaved Hibiscus grown five feet high. The pointed ovate leaves are downy and whitish on the under side. The lower ones are three-lobed. The base of the flower-stalks and leaf-stalks are often grown together. The white or rose-colored corolla has a crimson eye and is five inches broad.

BLADDER-KETMIA HIBISCUS.— An herb one or two feet high, somewhat hairy and grows from an annual root. The lower leaves are toothed and the upper ones are three-parted with narrow divisions. The calyx is bladdery after flowering and encloses the pod. The flower only opens in mid-day sunshine. The corolla is greenish-yellow with a dark-brown eye.

FLAX FAMILY.

FLAX.— Sepals, five, overlapping. Petals, five, and on the receptacle. Stamens, five, joined at the bottom. Styles, five. A ten-celled pod which splits into ten parts when ripe. Flowers open only for a day.



FLAX. (LINUM.)

COMMON FLAX.— Grows from annual root. Leaves, lance-shaped, and blue flowers.

VIRGINIA FLAX.— Grows from a perennial root. Leaves, lance-shape or oblong. Flowers are yellow and very small.

CAMELLIA FAMILY.

To this belongs the Tea Plant. In our country we know this family only through the green-house Camellia or Japonica.



CAMELLIA.

INDIAN CRESS FAMILY.

Twining, trailing, juice biting like Mustard. Alternate leaves. Showy, irregular flowers.

NASTURTIUM.— Smooth. Round, shield-shaped leaves. Large, orange-yellow flowers. Three of the petals fringed. Cultivated.

CANARY BIRD.— High climber. Leaves, lobed. Petals, pale yellow, cut, fringed. Cultivated.



MALLOW (*Malva Sylvestris*.)
a, spray of blossom and fruit; *b*, flower reversed;
c, fruit; *d*, section of fruit.



NASTURTIUM.



FLAX.
1, flower and bud; *2*, seed.

LINDEN FAMILY.

Tough, fibrous bark. Mucilage, like in that of the mallow family.

LINDEN OR BASSWOOD.—Five sepals, edge to edge in the bud. Five cream-colored petals. Stamens wavy, in five clusters. Two-celled anthers. One pistil, five-celled seed-cradle. Large soft-wooded trees. Heart-shaped leaves. Flowers in small clusters, hanging from the axil of the leaf, and united part way by a close covering leaf-like bract.

AMERICAN LINDEN.—Green, smooth leaves, sometimes downy underneath. An odd, little, petal-like body in the middle of each cluster of five stamens.

EUROPEAN LINDEN.—Leaves smooth. Stamens seldom in clusters, and no little petal-like bodies in the centre.

WOOD-SORREL FAMILY.

Small herb—sour juice. Leaves in three leaflets. Flowers have ten stamens, a five-celled pod, with two or more seeds in each cell.

OXALIS.—Sepals, petals, styles all five. Stamens, however, are ten. The filaments united at the base. A thin, five-lobed pod. Flower in summer. Some juice. Leaves of three leaflets.



CLOSED LEAVES OF OXALIS.

The common yellow Wood-Sorrel has leafy, ascending stems; five or six small, yellow flowers on one flower-stalk.

COMMON WOOD SORREL.—The leaves and one-flowered scape rise from a scaly root-stalk. The petals are large and white with reddish veins. It is a hairy plant.

VIOLET WOOD-SORREL.—The leaves and scape grow from a scaly bulb. The scape has several flowers with violet petals.

BALSAM.

Tender annuals. A watery juice. Very irregular flowers. You all know the funny little pod which, when ripe, goes off like a little pop-gun. Take it in your hand, and see how the five parts of the pod will coil up when you burst it. Calyx and corolla colored alike so that it is hard to tell which parts are sepals, which petals. One part extends backward forming a spur. The two inner parts are unequally two-lobed. Five stamens on the receptacle. These are very short and are united over the pistil. Large seeds. Simple, alternate leaves. Showy flowers.

**WOOD-SORREL.**

1, cluster; 2, section of flower; 3, 4, fruit.

GARDEN BALSAM.—Showy flowers clustered in the axils of the crowded lance-shaped leaves.

PALE JEWEL-WEED.—Pale yellow flower. the hanging sac broad. Oblong leaves. In rich shady soil.

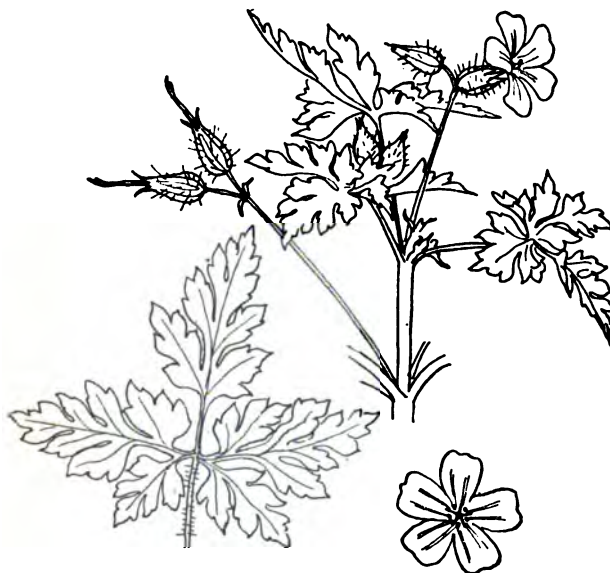
SPOTTED JEWEL-WEED.—Orange-colored flowers spotted with reddish brown. Sac long.



WILD GERANIUM (*Crane's Bill*.)
1, branch; 2, fruit; 3, pistil with styles curved.



WILD GERANIUM (*Geranium pratense*.)
a, spray of blossoms; b, seed pods; c, seed.



DRAWING.

GERANIUM FAMILY.

Small herbs: Scented leaves. Puckery roots. Sepals, five, overlapping. Petals, five. Stamens, ten; but some of them without anthers. Pistils, five, grown into one, united to a long beak. When ripe, the styles split away from the beak and curl up. No stipules. The flower leaves are opposite.

WILD GERANIUM or CRANE'S BILL. — Herbs. Petals, all alike. Ten stamens with anthers, every other one short.

CAROLINA GERANIUM. — Spreading stems. Five-parted leaves, cut in narrow lobes. Small flowers. The petals are flesh-color, notched at the end. Grows in waste places. A biennial or an annual root.



PELARGONIUM.

PELARGONIUM — Includes house Geraniums.

SPOTTED GERANIUM. — The stem grows erect from a perennial root. The leaves are five-parted, cut and toothed and often have whitish blotches. The petals are pale-purple. Found on the borders of woods.

HERB-ROBERT GERANIUM. — Spreading stems. The leaves are three-divided with twice pinnately cleft divisions. The flowers are small and purple.

RUE FAMILY.

Strong scented, sharp tasting. *Leaves dotted.* In these little dotted places are sacs filled with a kind of oil. Perfect flowers. Stamens eight to ten. Yellow concave petals. Round pod.

RUE — Has the family traits, with perfect yellow flowers, eight or ten stamens. The petals hollow. There is a roundish pod.

FRAXINELLA. — It is a strong-scented herb with pinnate leaves. The flowers are large, white or purple with slender petals and long stamens. The five pods are flattened and slightly united.

PRICKLY ASH. — It is a shrub or tree with prickly stem and pinnate leaves. The flowers are dioecious. The stamens and petals are four or five and pistils from two to five forming fleshy pods containing one or two black seeds.

HOP-TREE. — A shrub or tree with smooth stem. Leaflets three. The flowers are polygamous. Pistil one, making a two-celled and two-seeded key which is winged all round.

SUMACH FAMILY.

To this belong the Sumach, Dogwood, Poison Ivy and the Smoke-Tree. No child but knows the Smoke-Tree when he sees it in the gardens. The Sumach, too, with its great clusters of crimson fruit crowded close together like a spike. But some children are afraid of so many vines, lest they should be the Poison Ivy. Let us see just how to tell this plant from the many harmless vines.



SUMACH.

POISON IVY. — First of all it has such *smooth, shining leaves.* The stems climb by rootlets. Each leaf has three leaflets.

DOGWOOD. — The leaves of these, too, are *smooth.* The leaves are *pinnate*, with from seven to thirteen leaflets. Flowers in *slender panicles* in the *axils.* Fruit *smooth.* *Swamps.*

STAG-HORN SUMACH. — It is a small tree with the branches and stalks velvety-hairy. The leaves are pinnate and pale on the under side. The flowers and sour fruit are very many in a great crowded panicle. They are crimson and hairy.

SMOOTH SUMACH. — This is very much like the Stag-horn, but is a shrub with pale, smooth branches and stalks.

DWARF SUMACH. — It is a shrub from one to four feet high. The branches and stalks are downy and the stalk between the shining leaflets is margined and winged. The fruits are red and hairy.

VENETIAN SUMACH. — It is a shrub with simple oval or obovate leaves. The branches of the panicle lengthen after flowering and are covered with long hairs, and make large, light bunches.

STAFF-TREE FAMILY.

These are woody plants with simple alternate leaves. Stamens and petals of equal number and inserted on a stick part of the receptacle which quite fills the bottom of the calyx. A bright-colored pod through which the seeds show.

WAX-WORK. — Racemes of white flowers. The disk is cup-shaped. The calyx is long, the pod orange-shaped. A twisting shrub commonly called Bittersweet. Leaves alternate.

BURNING BUSH. — Little dull green or dark purple flowers in axillary racemes. The disk is flat, covering the ovary, and bearing four or five short stamens. The style is short. Red pods. Leaves opposite.

SPINDLE TREE. — Very like the Burning Bush. The pods are smooth and very distinctly lobed.

STRAWBERRY BUSH. — This is very like the preceding; but the pods are roundish and rough.

SOAP-BERRY FAMILY.

A strange name. And to think that to the Soap-Berry Family belong the Horse-chestnut, the Buckeye, the Bladdernut, and all the kinds of Maple trees!

BLADDERNUT. — Is a shrub with opposite leaves which are pinnate, or have three leaflets having stipules and stipels, or little stipules to the leaflets. The regular and perfect flowers are white, and grow in racemes. The petals are five, also the stamens, and grow alternate with each other. The fruit is three bladdery pods united, containing bony seeds.

HORSE-CHESTNUT. — The flowers are polygamous, that is, staminate, pistillate, and perfect. The calyx is bell or tube-shape. The petals are five and spreading. The stamens are long and declined. Style one. The ovary is three-celled, each cell containing a pair of ovules, but only one or two ripen in the fruit, becoming a three-valved leathery pod. The seeds are large like chestnuts, and the fruit is prickly. The flowers grow in thick panicles. The leaves are opposite, palmate, and have seven leaflets.



HORSE-CHESTNUT.

BUCKEYE. — This is somewhat like the Horse-chestnut, but the petals are four and unlike, with long claws in the calyx. The leaflets are generally five.

NEGUNDO. — The twigs are green, and the leaves are pinnate, with from three to five velvety leaflets. The flowers are dioecious, that is, either with stamens only or pistils only, and small and greenish and without any petals. The stamens are four or five. (A Maple.)

MAPLE. — This is quite like the Negundo, but the leaves are simple lobed and palmate, and the flowers are polygamous or perfect.

BUCKEYE.

FETID, OR OHIO BUCKEYE. — It is a tree. The petals of the corolla are small, erect, and

pale-yellow. The curved stamens grow above the petals. The fruit, when young, is prickly like the Horse-chestnut.

SWEET BUCKEYE.—The yellow or reddish petals are erect and enclose the stamens. Smooth fruit.

RED BUCKEYE.—A shrub, with the scarlet calyx of the flower red, as are also the petals. Otherwise it is like the Sweet Buckeye.

SMALL-FLOWERED BUCKEYE.—The leaflets have stalks. The flowers are in a long, raceme-like panicle. The petals are white and somewhat spreading. Smooth fruit, and seeds eatable, not bitter as the seeds of the other kind.

MAPLE.

STRIPED MAPLE.—It is a small tree, grows in cool woods. The leaves are large and have three taper-pointed lobes. The bark is green with darker stripes. The flowers are in hanging terminal racemes, with greenish petals in late spring. Stamens from six to eight.

MOUNTAIN MAPLE.—Is also a shrub with gray bark. Leaves same as the striped Maple and small flowers in erect racemes.

SYCAMORE MAPLE.—This is an Imported shade-tree. It has large leaves, strongly five-lobed, and large hanging racemes. Flowers soon after the leaves appear.

NORWAY MAPLE.—Also an imported tree. The leaves resemble the Sugar Maple but are a brighter green, rounder, and have long, pointed teeth. The flowers are in an erect terminal corymb. The wings of the fruit are very large and spreading. The leaves and flowers appear at the same time.

SUGAR, OR ROCK MAPLE.—It is a tall tree found in rich woods or often planted for shade. The leaves are five-lobed, sometimes three, with a few coarse, wavy teeth. Flowers hanging on very slender hairy stalks with no petals. It has small wings and is not ripe till autumn.

WHITE OR SILVER MAPLE.—A tree common on river banks. The leaves are deeply five-lobed with the lobes cut and toothed and white on the under side. The flowers are quite a little smaller than the leaves, and grow on short stalks in small umbel-like clusters from lateral leafless buds. They are greenish-yellow without petals. The stamens are usually five. The fruit is wooly when young with large, smooth, spreading wings. It ripens and falls in early summer.

RED OR SOFT MAPLE.—The leaves with three or five short lobes toothed and whitish beneath. The flowers on very short stalks which lengthen in fruit. The petals are linear-oblong and red or occasionally yellowish. Wings of the fruit reddish and small.

GRAPE FAMILY.

You all know the Grape Vine; but I wonder if you know that the Virginia Creeper, with its small, blackish berries, its five petals, and its hand-shaped leaves, belongs also to the Grape Family.

EUROPEAN GRAPE.—The flowers are perfect and the leaves are sharply and deeply lobed.

NORTHERN FOX GRAPE.—The leaves are very woolly when young, and turn rather rusty on the under side later. The berries are large, purple or amber-colored. Other varieties of this kind are the Isabella and Catawba Grape.

SUMMER GRAPE.—The leaves have little hairs underneath like loose cobwebs when young, but are smoothish when old. The fertile-flowered panicles are very long and slender. The berries are small, and ripen with the early frost.

FROST-GRAPE.—The thin, smooth leaves are heart-shaped, with large, coarse teeth, and a very little, or not at all lobed. The flowers are in loose panicles. The berry is blue or black, with a bloom, sour and ripens late.

MUSCADINE, OR SOUTHERN FOX GRAPE.—The bark of the stem does not come off in loose strips, as it does in the other kind. The shiny smooth leaves are round, heart-shaped and coarsely toothed. The flowers are crowded in small panicles. The berry has a thick, tough skin, is large and musky.

SUMMER.

What is so rare as a day in June?

Then, if ever, come perfect days;

Then Heaven tries the earth if it be in tune,

And over it softly her warm ear lays.

Whether we look or whether we listen,

We hear life's murmur or see it glisten;

Every clod feels a stir of might.

An instinct within it which reaches and towers,

And, groping blindly above it for light,

Climbs to a soul in grass and flowers.

— LOWELL.

CACTUS FAMILY.

The thick plants, with their little sharp points, we see in this section are house-plants or greenhouse curiosities.



CACTI.

EVENING PRIMROSE FAMILY.

Herbs, the parts of the blossoms in fours. In green-houses we have the Fuchsia; in gardens the Clarkia, known by its long claw-like petals and broad petal-like stigmas. Wild, however, we have the

EVENING PRIMROSE. — Calyx with tube continued beyond the ovary, bearing four narrow lobes, turned down. Tall, lance-shaped leaves, flowers spike-like, opening at sundown or in cloudy weather



CLARKIA.

CLARKIA. — Known by its long-clawed petals; is a garden plant.

WILLOW HERB. — Calyx with its tube not continued beyond the ovary. Petals four, purple or white. Stamens eight. Pod long and slender, many-seeded. The seeds bear long tufts of downy hair.

The Fuchsia or Ladies' Eardrop are of this Evening Primrose Family.



FUCHSIA.

LOW EVENING PRIMROSE. — There are several stems growing from one to three feet high from a perennial root. The large flowers open in the sunshine. The pod is rather club-shaped, has four wings and is stalked.

SMALL EVENING PRIMROSE. — The stems grow from one-half to one foot high. The small flowers are about one-half inch wide, and open in sunshine. The pod is club-shaped, has four sharp angles but is scarcely stalked.

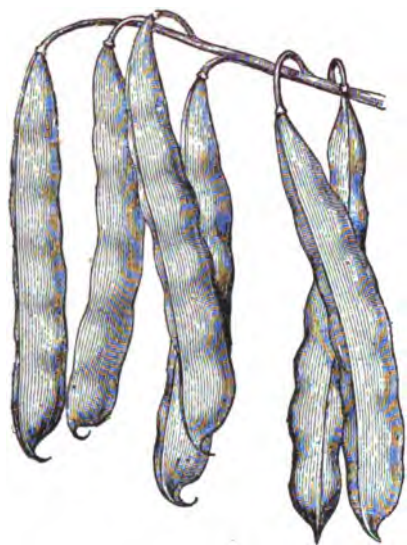
WILLOW HERB.

GREAT WILLOW HERB. — A simple stem four to seven feet high. The leaves are lance-shaped. The flowers showy, pink purple in a long loose spike. The widely spreading petals are on claws. The stamens and style turn down.

SMALL WILLOW HERB. — A branching plant from one to two feet high. The leaves are lance-oblong and often purple-veined. The flowers are very small with purplish petals.

PULSE FAMILY.

Many of the blossoms belonging to plants of this family are *butterfly-shaped*. Two of the petals spread out like wings, while the others make a little pouch in which are the stamens and the style. Other flowers however regular, but they are all recognized by their pods and leaves.

**PEAS.**

the Senna and even the Sensitive plant are members of this family too. The Clover all children know. We sometimes think the Red Clover, and the White Clover too common to be worth much attention. They are so beautiful I wish you would take pains to notice how daintily the little flowers are grouped together, and how prettily the little leaflets are lined. Perhaps if you knew it had another name you might notice it. It is called sometimes, Trefoil, which means three-leaved. It is a sweet

**LEAF OF THE SENSITIVE PLANT.**

I am sure you will think at once of the Pea, the Bean, the Locust tree, and the Wistaria that creeps up around the porch and blossoms so beautifully in the early spring; but you would not think that the Clover, the Indigo, little flower indeed. Ask the bees if it is not; and if it were not so generous and so social, nodding its little head at us from every side, I suppose we should take the greatest pains in the world to cultivate it in our gardens.

FOUR-LEAVED CLOVER.

In the flowery meadow,
Down upon her knees,
Searching mid the clover-blossoms
Swaying in the breeze—
Flitting here and flitting there,
Followed close by Rover,
Seeking—seeking everywhere
For a four-leaved clover.

—EVA GLEN.

1. — TRUE PULSE SUB-FAMILY.

This family, so very large, is divided into three sub-families. The True Pulse Sub-Family has its corolla always truly butter-fly shaped; that is, the corolla is made up of five petals; an upper one, the largest, called the *standard*; two side petals called *wings*; and one under petal called the *keel*. Leaves simple or compound.

LOCUST TREE.—Leaves, odd-pinnate. Flowers white or rose-color in hanging racemes. Shrubs, not climbing.

BLADDER - SENNA.—Leaves odd-pinnate. Bladder-like pod. Yellow flowers in hanging racemes. A shrub; not climbing or twining.

LABURNUM.—Three leaflets. A narrow pod. Yellow flowers in hanging racemes. Shrub. Not climbing.

WISTARIA.—Shrubs with *long, twining* stems. Purplish flowers in racemes.

RATTLE BOX.—An herb. Stems not twining. No trace of tendrils. Triple leaves. Stipules. Yellow flowers. A full, many-seeded pod.

LUPINE.—Herb. Not twining. Leaves of from five to fifteen palmate leaflets. Flowers in long racemes, erect.

PEANUT.—*Pod forms under the ground*. Leaves abruptly pinnate; four leaflets.

CHICK-PEA.—An inflated, two-seeded pod. Single white flowers. Serrate leaflets. Leaves odd pinnate.

HOARY PEA.—Flat, narrow pod, several seeds. A broad corolla. Entire leaves. Flowers in racemes or spikes.

ASTRAGAL.—Inflated, two-celled pod. A narrow corolla. Entire leaflets.

CLOVER.—Three leaflets usually. A small, thin pod. Persistent calyx. Flowers in heads. Stipules cling to base of the leaf-stalk. Pods like little burs.

MELILOT.—Wrinkled pods. Leaflets not dotted, serrate. Flowers in spikes or racemes.

MEDICK.—Pods curved or coiled. Leaflets not dotted. Flowers in spikes or racemes.

PSORALEA.—Leaflets dotted. Entire leaflets. Flowers in spikes or racemes.

BUSH CLOVER.—One-seeded. Pods very small and flat and closed. Stipules not at all joined to the foot-stalk.

TICK TRE-FOIL.—Pods separate into rough little joints. Stipules not joined at base of foot-stalk. Leaflets usually three.

PEA.—Stems inclined to climb. Pinnate leaves with tendrils. Calyx, five-parted. Round seeds. Few leaflets.

EVERLASTING PEA.—Style having an inner side. A quite large tendril. Calyx not leafy.

VETCH.—Style having a tip. A large tendril.

HORSEBEAN.—One oblong seed fixed by one end. Hardly any tendril. Calyx not leafy.

BEAN.—Three leaflets with stipules. Keel of corolla coiled into a ring or a spiral. Twining. No tendrils.

GROUNDNUT.—Tubers under ground. Brownish flower. Leaflets, five or seven. Keel coiled. A twining herb.

HOG PEANUT.—Pods under ground and above ground. Calyx, four-toothed. Keel not coiled. Leaflets, three, with stipules.

MILK PEA.—Leaflets, three, with stipules. Keel not coiled. Teeth of calyx sharp.

BUTTERFLY PEA.—Large, purple flowers. Five-toothed calyx. Keel not coiled. Calyx tubular.

AMORPHA.—Stamens, ten, joined only at base. *One petal*. A shrub. Pinnate leaves. Flowers small, purple. In a spike or in a raceme. Called also Wild Indigo.

2. — BRASILETTO SUB-FAMILY.

In this sub-family the corolla is sometimes butterfly-shaped or nearly so. But the standard is rather hidden in the other petals and is more or less irregular. Stamens ten or less, separate.

REDBUD.—Trees. Simple, round or heart-shaped leaf. Leaves come rather later than the flowers.

SENNA (CASSIA) Herbs. Abruptly pinnate leaves. Yellow flowers, not butterfly-like.

KENTUCKY COFFEE TREE.—Trees. Leaves compound. Flowers not all butterfly-like. Some flowers all pistils, others all stamens. Stamens, ten; petals, five. Pods broad and hard. Leaves very large, pinnate. Calyx tube-like.

HONEY LOCUST.—Stamens and petals three to five. Open calyx. Long, flat pods, a sweet juice or pulp within. Leaves pinnate. Trees have compound thorns.

PULSE FAMILY.



CLOVER.



SENSITIVE PLANT.



WISTARIA.



PEA.

3. — MIMOSA SUB-FAMILY.

Flowers very small in heads or spikes. Leaves generally twice or thrice pinnate. Petals are edge to edge in the bud. Stamens very many, very long, yellow. A greenhouse plant.

DESMANTHUS. — Stamens, three. Separate. Whitish petals. Smooth pod.

SENSITIVE PLANT. — Stamens, four or six. Rose-colored petals, cup-shaped flower. Bristly, flat pod in joints. Leaves close when touched.

SENSITIVE BRIER. — Stamens, ten or twelve. Rose-colored, cup-like flower. Narrow, rough pod. Leaves somewhat sensitive.

LOCUST.

COMMON LOCUST TREE. — Tree with a pair of spines instead of stipules. Flowers white in slender racemes. Sweet scented. Smooth pod.

CLAMMY LOCUST. — Clammy twigs. Thick racemes. Purplish calyx. Pod rough.

ROSE ACACIA (BRISTLY LOCUST) Shrub with bristly stalks and twigs. Large, rose-colored flowers.

CLOVER.

RED CLOVER. — Oval-like leaves with a pale spot on upper side. Rose-red flowers in a head with leaves underneath.

BUFFALO CLOVER —Obovate leaflets toothed. Rose-colored flowers in an umbel-like, long-stalked head.

WHITE CLOVER. — Low, smooth, creeping. Leaflets notched. White flower in a loose umbel raised on a long stalk.

RABBIT-FOOT CLOVER. — Silky, low, erect and in branches. Narrow leaflets; whitish flowers in dense, soft, silky, oblong heads. Common in poor, dry land.

YELLOW CLOVER. — Low, smooth plant. Corolla, yellow; turns brown. Found in dry, marsh lands.

MELILOT.

Flowers in raceme or spike. Corolla falls after flowering. A small, roundish pod. Sweet-scented foliage. Three leaflets, toothed.

YELLOW MELILOT. — Oblong, dull-pointed leaves. Corolla, light yellow.

WHITE MELILOT. — Leaflets as if cut off square at the end. White flowers.

MEDICK.

Flowers rather like the Melilot. A coiled pod. Leaflets, three.

LUCERNE OR PURPLE MEDICK. — Upright stems. Oblong leaves. Flowers purple in racemes. Spiral pods.

BLACK MEDICK. — Yellow flowers in short spikes. Leaflets wedge-shaped. Pods curved. Turning black and wrinkling as they ripen.

SNAIL MEDICK. — Strange pods that coil up like a snail's shell. Two-flowered.

EVERLASTING PEA.

Calyx not leafy. Flat style.

SWEET PEA. — Flowers two or three on a long stem. Sweet.

GARDEN EVERLASTING PEA. — Has pink or purple flowers. *Root perennial.*

MARSH PEA. — Stems lightly winged. Leaflets in pairs, two or four. Lance-shaped stipules; purple flowers, two to five.

PALE PEA. — Leaflets, three or four pairs. Large stipules. Flowers seven to ten, cream color. Stipules shaped like half a heart.

VEINY PEA. — Leaflets, five to seven pairs. Very small stipules. Flowers many in a cluster and of purple color.

BEACH PEA. — Leaflets four to six pairs. Large, leafy stipules. Flowers six to ten in a cluster, purple. Found near the Great Lakes.

VETCH (OR TARE).

TUFTED VETCH.—Many little downy leaflets. Crowded flowers, bending *down* on the spike. Color blue, turning purple later in the summer.

CAROLINA VETCH—Eight to twelve smooth, oblong leaflets. Many scattered, whitish flowers tipped with blue.

AMERICAN VETCH.—Ten to fourteen smooth, oval leaflets very veiny. Flowers four to eight, purplish or bluish.

COMMON TARE—Ten to fourteen narrow leaflets; violet-colored flowers.

BEAN.

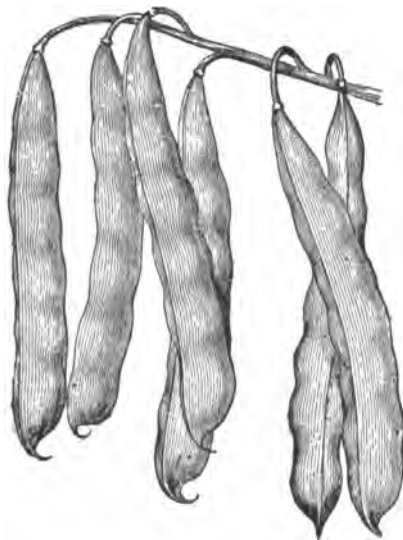
Keel of the corolla twisted or coiled. Stamens united into a tube. Flat, many-seeded pod. Somewhat twining. Three leaflets, the leaflets having little stipules.

PERENNIAL BEAN.—High climbers. Pointed, round-ovate leaflets. Flowers in long, loose racemes of purple color. Curved pods.

TRAILING BEAN.—Spreading on the ground, three-lobed leaflets; a few flowers, crowded at the end of a long flower stalk. Narrow; straight pods.

COMMON OR KIDNEY BEAN.—*Straight* pods pointed at one end. Thick, kidney-shaped seeds inside. Dwarf or Bush Bean, a low kind that does not twine. The Scarlet Runner, a free, climbing kind, red flowered.

LIMA BEAN.—Broad, flat pods, a few large, flat seeds.

**FALSE INDIGO.**

Flowers generally in racemes. Erect, with the sides rolled back. Keel petals nearly straight like the wings. Ten separate stamens. Palmate leaves of three leaflets. Pod a thick-walled, pointed bladder containing many seeds.

YELLOW FALSE INDIGO.—Whitish, bushy. Leaves quite close sitting. Small leaflets. A few flowers at the end of the panicked branchlets, yellow. Flowers all summer.

BLUE FALSE INDIGO.—Tall and stout. Lance-shaped stipules as long as the petals. Wedge-like leaflets. Many large, blue flowers in a long raceme. Found in rich soil or cultivated.

SENNA.

Calyx of five sepals. Five spreading petals rather irregular but not butterfly-shaped. Ten stamens; those on the side shorter, or at least without anthers. The anthers open at the top by two chinks. A many-seeded pod. Leaves pinnate.

MARYLAND SENNA.—A perennial. Leaflets six to nine pairs. Rich soil.

PARTRIDGE PEA.—A low, spreading annual. Ten to fifteen pairs of leaflets, linear-shaped. Flowers large and showy. Ten anthers, six of them purple. Found in sandy fields.

SENSITIVE SENNA.—Small flowers; very short flower stalks; five anthers. In other points very like the Partridge Pea.

LYTHRUM FAMILY.

Herbs. Opposite leaves, no stipules. Four to seven petals; four to fourteen stamens, all on the calyx. Between the teeth of the calyx are little teeth.

LYTHRUM.—Regular or nearly regular flowers. Cylinder-shaped calyx, several ribs or angles. Petals four to seven, unequal. Stamens twice as many as the petals.

NESOEIA.—Regular or nearly regular flowers. Short, bell-shaped calyx. Five petals. Stamens long, sticking out from the flower, ten or fourteen. Pod with three, four or five cells. Leaves often whorled.

CUPHEA.—Irregular calyx, few flowers, spurred. Unequal petals; twelve unequal stamens in two sets. A few-seeded pod *bursting through one side of the calyx*.

ROSE FAMILY.

This very large family are alike in their regular flowers, alternate leaves with stipules, five petals (generally,) stamens ten or more, which are inserted on the calyx.

To this family belong the Almond, the Peach, the Apricot, the Plum, the Cherry, the Strawberry, the Rose, the Bramble, the Hawthorn, the Mountain Ash, the Apple, the Pear, the Chokeberry, and the Quince. Others of the Rose family are the.



BLOSSOM OF THE CHERRY

AGRIMONY.—Pistils only one or two. These make akenes which are enclosed in the narrow tube of the calyx. Five yellow petals. Twelve or more stamens. A bur like calyx.



BLOSSOM OF THE PEACH.



BLOSSOM OF PEAR.

BURNET.—Pistils and akenes like the Agrimony. The Burnet has no petals; but the petal-like parts are really the spreading lobes of the smooth calyx. The flowers are perfect, with four long white stamens. The flowers are in a spike.

SALAD BURNET.—This is like the Burnet except that the flowers are not perfect, there are many stamens, and the flowers are in a head.



JUNE-BERRY.

JUNE-BERRY OR SHADBUSH.—This has one or two seeds in each cell of the fruit. The petals are long and narrow, and the fruit is a ten-celled berry.

BARREN STRAWBERRY — This has from three to ten pistils, and the fruit forms akenes. There are many stamens, five yellow petals, and the leaves are made up of three little leaflets.

DALIBARDA. — Like the Barren Strawberry except that there are five white petals, and the leaves are heart-shaped.

MEADOW SWEET.

COMMON MEADOW-SWEET. — This grows in damp grounds, has oblong, lance-like or wedge-shaped leaves; the flowers are in a crowded panicle, and are of a pinkish color. Calyx five parted, pistils usually five, making little pods with few seeds in each.

HARD HACK. — These leaves are woolly underneath, and the flowers are pinkish. Otherwise like the common Meadow-sweet.

MAYWREATH. — Has long, re-curved stems, small, spatulate leaves. Flowers small, and arranged either in umbels or on short, leafy shoots. A cultivated flower, and flowers in the spring.

NINEBARK — Has re-curling branches, three-parted, rounded leaves. Flowers in umbels. little bladder-like pods which turn purplish. The old bark on the stems peels off. A cultivated flower.

SORB-LEAVED MEADOW SWEET. — This has primate leaves, with lance-shaped, toothed leaflets. The flowers grow in large panicles.

QUEEN OF THE PRAIRIE. — Has from three to seven leaflets, besides some other very little ones. The leaflet at the end is very large, and is parted. It has a very beautiful peach-bloom-colored blossom.

ENGLISH MEADOW SWEET. — Has leaves similar to the Queen of the Prairie, but smaller. There is a white down on the under side. The flowers are white.

DROPWORT. — This has anywhere from nine to twenty-one leaflets, beside other very small ones. These are long and deeply cleft. There are cymes of a few slender branches. Flowers white, sometimes single, sometimes double.

INDIAN PHYSIC.

Calyx club-shaped, and has five points. There are five petals—not of equal size—rather lance-shaped. Stamens from ten to twenty. Five little pods, five pistils. Leaves are made up of three thin, small leaflets. The flowers grow in panicles, are in loose corymbs

COMMON INDIAN PHYSIC. — Has oblong leaflets, with small stipules. Cultivated.

WESTERN INDIAN PHYSIC, OR AMERICAN IPECAC. — Has lance-shaped leaflets, more deeply cut than those of the Common Indian Physic, and the stipules are larger.

AVENS.

This has a bell-shaped calyx, rather flat, five-parted, and thin with five little lobes between these larger five. Five petals. There are many stamens. Many pistils, making little akenes which are tipped with the style, which remains like a long tail. The flowers are single or corymbd. In all the common kinds this style is hooked in the middle.

WHITE AVENS. — Is smooth, or sometimes just a little downy. White petals and bristly akenes.

VIRGINIAN AVENS. — Bristly, and quite a little stouter than the last. Petals are greenish-white, and the akenes are smooth. The petals, too, are shorter than the calyx.

YELLOW AVENS. — Is rather hairy. Has large yellow petals, which, like those of the White Avens, are longer than the calyx.

WATER AVENS. — Has root leaves, with a large, rounded-lobed-end leaflet, and some very small ones below. The stem leaves are few, three-cleft, or having three leaflets. The petals do not spread, are somewhat notched and are purplish.

CINQUEFOIL.

That little yellow flower that is all over the ground, everywhere sticking up its bright little face, with those little leaves that look almost like strawberry leaves. A little, flat, open flower of five parts. Stamens and pistils many. The pistils are in a little head. It is called Cinq-foil from the French for "five-leaved," just as the clover was named "tre-foil," meaning three-leaved.

NORWAY CINQUEFOIL. — Is erect, coarse, hairy. The leaves are rather ovate, toothed, and have three little leaflets.

CANADA CINQUEFOIL. — Runs along the ground. Leaves like the preceding, or very nearly so; the flower-stalks grow from the axils and are quite long.

SILVERY CINQUEFOIL — Is low, has spreading branches, is woolly, and has five leaflets.

SILVER-WEED. — This creeps along, sending up leaves of many little leaflets, from nine to nineteen, besides other very little ones, all of which are powdery underneath, and having long-stalked, yellow flowers.

SHRUBBY CINQUEFOIL. — Is quite bush-like. Leaflets, five or seven, crowded together at the end of a short foot-stalk, lance-shaped, entire, silky. The flowers are yellow. This plant grows in the bogs.

MARSH CINQUEFOIL. — Stems grow up from a creeping stem. Leaflets, five to seven; crowded, toothed, lance-shaped or oblong. Flowers, dull purple.

BRAMBLE.

This includes Raspberry vines. Thimbleberry vines, and all sorts of Blackberry vines.



THE DEWBERRY OR LOW BLACKBERRY.

There is a little story of the Moss Rose that runs something this wise: As a reward for some kind, sweet deed of a pretty pink rose, Mother Nature promised her her choice of all the beautiful things in Nature's work.



MOSS ROSE.

"Give me," said the rose, "a dress from the most beautiful thing the earth produces." And Mother nature stooped down, and threw about her a dress of the beautiful, soft, green moss.

HAWTHORN

These are small, thorny trees. Flowers white, in corymbs, white, and flowering in spring. Its fruit contains many one-seeded stones. Calyx has a pear-shaped tube, which is coherent with a two to five celled ovary. Five roundish petals. Styles two to five.

ENGLISH HAWTHORN. — Ob-ovate leaves, with a wedge-like base. The lobes are cut. Styles two or three. A pretty red fruit.

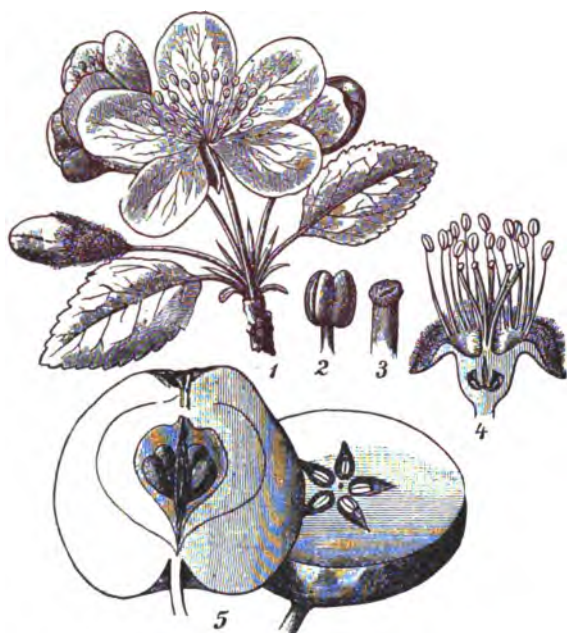
WASHINGTON HAWTHORN. — Broad, ovate leaves. Heart-shaped at the base. Cleft. Styles five. A red fruit, not larger than beans or peas.

SCARLET - FRUITED HAWTHORN. — Smooth. Roundish, thin, cut, or toothed leaves on slender stalks. A scarlet, oval fruit.

PEAR HAWTHORN. — Downy when young. Thick, oval, or wedge-ob-ovate leaves, narrowing into a short foot-stalk. Large flowers, and large crimson or orange fruit. Eat-able.

COCKSPUR HAWTHORN. — Smooth. Leaves wedge-ob-ovate, or lance-shaped. Toothed above the middle, thick and shining. A dark red fruit. Long thorns.

SUMMER HAWTHORN. — Rather downy. Leaves ob-ovate, or wedge-shaped. Cut. Fruit rather pear-shaped. Yellowish or reddish. Flowers few.



APPLE.
1, branch; 2, anthers; 3, pistil; 4, group of stamens and pistils; 5, section of fruit.



ROWAN (Mountain Ash.)
a, spray of blossom; b, blossom; c, anthers and pistil; d, pistil; e, berries; f, g, sections of seed.



BLACKTHORN (*Prunus spinosa*.)
a, spray of bloom; b, spray of fruit; c, stamens; d, e, sections of fruit; f, kernel.



PEAR.
1, branch; 2, section of flower; 3, section of fruit.

LIGHTNING TREES.

Speaking of the Mountain Ash as one of the members of the-Rose Family, reminds me of a legend of the Lightning Trees, of which the Mountain Ash is one.

The demons of the underground world had stolen a beautiful golden cup from the gods. The gods were in great grief over the loss of the cup which they so highly prized.

"I will try to get it," said the falcon. "I, with my sharp, far-seeing eyes saw them put it in a cave, deep down among the mountains."

So the falcon set off on his mission for the gods.

Reaching the cave he had a struggle with one of the demons, who had been placed there to guard the cave. A terrible struggle, in which the falcon, though victorious, lost many of his feathers, and was also severely wounded. Then, wherever the blood or his feathers fell, a beautiful tree sprang up — a tree with *feather-like* leaves, and *blood-red* berries. The arrows which the demon shot after the falcon were the lightning flashes. Hence all trees with red berries and feather-like leaves were called "Lightning Trees."

GOURD FAMILY.

To this belong the Squash, the Pumpkin, the Cucumber, the Musk-melon, the Water-melon, etc.

MUSKMELON.— The calyx and petals same as in the Cucumber. The fertile flowers are perfect. The fruit is thick, smooth, and sweet, and the seeds are sharp-edged and pointed.



GOURDS.

BOTTLE GOURD.— The petals are white with greenish veins. The peduncles (flower-stems) are very long. The fruit is variously shaped and has a hard or woody rind. The three filaments and anthers are separate or easily separated. The fruit and ovary with many seeds.

CUCUMBER.— The calyx is a bell-shaped cup. The petals all yellow, and separate or joined at the base only. The anthers are loosely crooked. The fruit is narrow and rough-pimpled when young, and the seeds are sharp-edged and pointed.



MELON BLOSSOM.



BLADDER-CUCUMBER.

GOURD FAMILY.

PASSION FLOWER. — Leaves three-
lobed, white with a
shaped like a

FLOWER. —
said that they
resemble or cruci-
form the crown or
ners; the five

.Y.

the Currants,
oseberries.



The thorns are large
sort. The berry is

BERRY. — Thorns
greenish and stalks
styles are enclosed.
The berry is prickly.

BERRY. — The thorns
all. The greenish or
short-stalked, with the
styles projecting a little.

BERRY. — Thorns
greenish and on slender
stamens are one-
berry.

Produce at least one piece during the
from the children during the
eight weeks.

Produce at least one piece during the
from the children during the
eight weeks and reserved.

Produce at least one piece during the
from the children during the
eight weeks and reserved.

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BLADDER-CUCUMBER.

GOURD FAMILY.

WATERMELON.—The calyx with hardly any cup. The petals are buff or cream-color and united at the base or separate. The anthers loosely crooked. The fruit is large, watery and smooth. The seeds are smooth and thick-edged.

BALSAM-APPLE — Leaves much cut. The calyx with hardly any cup, and the petals cream or buff color. The fruit is a rough, reddish berry, with wrinkled seeds. Petals and anthers same as in the Cucumber, Water-melon, etc.

BLADDER-CUCUMBER.—The leaves are sharply five-lobed. The corolla of the sterile flowers are white and six-parted, and the long racemes are pretty when cultivated. The ovary and fruit are either one-seeded or four-seeded. The fruit is oval, a bladder-like pod with weak prickles. It bursts the top, and contains two fibrous-netted cells, with two large seeds in each cell.

BURR-CUCUMBER.—It is a small-flowered climber like the Bladder-Cucumber. The leaves are five-angled. The five-lobed sterile flowers are greenish-white, and the corolla is wheel-shaped. The fruit is a prickly-barbed burr, small, ovate, and one-seeded.

PASSION-FLOWER FAMILY.

Tendrill-bearing vines with palmately-lobed leaves.



PASSION FLOWER.

PASSION FLOWER.—In the South and West are two wild species—the Small Passion Flower and the May Pop Passion Flower.

SMALL PASSION FLOWER.—Leaves bluntly three-parted. Flowers greenish-yellow.

MAY POP PASSION FLOWER.—Leaves three-parted, toothed. Flowers broad, white with a pinkish and purple crown. Fruit shaped like a hen's egg.

SOUTH AMERICAN PASSION FLOWER.—Found by missionaries, who fancied that they found in it emblems of Christ's passion or crucifixion. The fringe, they said, was the crown or thorns; the large anthers, hammers; the five styles the nails.

CURRENT FAMILY.

Summer friends of ours—the Currants, and their sister bushes—the Gooseberries.



GOOSEBERRY.

GARDEN GOOSEBERRY.—The thorns are large and the flower stalks are short. The berry is either smooth or bristly.

PRICKLY WILD GOOSEBERRY.—Thorns none or slender. Flowers greenish and stalks long. The stamens and styles are enclosed. The leaves are downy, and the berry is prickly.

SMALL WILD GOOSEBERRY.—The thorns are very short, or none at all. The greenish or purplish flowers are very short-stalked, with the stamens and two-cleft styles projecting a little. Berry small and smooth.

SMOOTH WILD GOOSEBERRY.—Thorns stout, if any. Flowers greenish and on slender stalks. The two styles and stamens are one-half inch long. Smooth berry.

CURRENTS.

RED CURRANT.—The rounded leaves are heart-shaped and somewhat lobed. The hanging racemes form lateral separate buds. Flowers greenish or purplish and flat. The berry is red and smooth. The stems are not prickly or thorny. The White Currant is a variety of the Red Currant.

FETID CURRANT.—Reclining stems. The leaves are five-lobed and deeply heart-shaped. Racemes upright and flowers greenish and flatish. The berry is strong-smelling, pale red, with bristly stalk.

WILD BLACK CURRANT.—The leaves grow on long foot-stalks, are sprinkled with dots on both sides and are slightly heart-shaped and sharply lobed. The racemes are rather drooping with yellowish-white oblong flowers. The black-berry is oblong and rather spicy.

GARDEN BLACK CURRANT.—The leaves are on shorter stalks and less dotted than the Wild Black Currant. The racemes are looser and the Black Berries larger.

MISSOURI, OR BUFFALO CURRANT.—The leaves are smooth and the racemes have leafy bracts. The calyx of the flowers is like a long yellow tube and spicy-fragrant.

STONE CROP FAMILY.

THE HOUSE LEEK.—You all know this plant I am sure, though you have very likely called it the "bladder plant."

SEDUM.—There is a little variety called Sedum, belonging to this family. Small flowers with petals and pistils entirely separate. Stamens eight or ten, four or five pistils, narrow petals and sepals.

DITCHWORT.—The flower has five sepals but no petals, and the five pistils are united below. The leaves are lance-shaped and thin.

STONECROP OR ORPINE.

MOSSY STONECROP.—It is moss-like, small and creeping. The little sessile, ovate, thick leaves grow very close together on the stem. The flowers are yellow.

THREE-LEAVED STONECROP.—The spreading stems grow from three to eight inches high. The leaves are wedge-ovate or oblong with the lower ones in whorls of three. The earliest flowers with parts in fives, but the others generally in fours. The petals are white.

HANDSOME STONECROP.—It grows from four to twelve inches high. The leaves are thread-shaped. The flowers are crowded and have rose-colored corollas.



STONECROP.

GREAT STONECROP OR LIVE-FOR-EVER.—It grows two feet high. The leaves are oval and the purple flowers are in a close, compound cyme.

SAXIFRAGE FAMILY.

From the Latin words *Saxum* and *Frango*. Meaning to split and a rock. And if you have ever seen the little white Saxifrage growing in the cracks of the big rocks, you will not wonder that Botanists call it saxifrage.

HYDRANGEA.—The little Saxifrage has, however, a very aristocratic sister, who has probably long since forgotten that the modest little Saxifrage is any relation of hers.

The Hydrangea likes now to sit in great pots on beautiful lawns and piazzas where it can display its great heads of blossoms.

SYRINGA.—This, too, is a garden plant: but it doesn't seem so vain and so spoiled as the Hydrangea is; for it has never forgotten to keep its sweetness.

SAXIFRAGE.—An herb with the leaves generally alternate on the stem. The calyx is deeply five-cleft, but the five petals of the corolla are entire. Ten short stamens and two styles. The many-seeded pod is two-beaked, or else there are two pods.

ALUM-ROOT.—Is an herb with alternate leaves generally. The flowers are in a long panicle. The small greenish or purplish petals are entire, and between the short lobes of the bell-shaped



VIRGINIA SAXIFRAGE.
SAXIFRAGE FAMILY.



SEDUM.
STONECROP FAMILY.



GRASS OF PARNASSUS.
SAXIFRAGE FAMILY.

calyx. Styles two and stamens five. The two-beaked pod has but one cell and containing many seeds.

MITREWORT.—Also an herb with mostly alternate leaves. There are two leaves on the stem below the slender raceme. The slender, whitish petals are plunatifid. There are ten short stamens. The styles and pod are short and but one-celled. The pod opens across the top and has few seeds at the bottom.

FALSE MITREWORT.—The flowers are on a naked scape in a short raceme. The five petals have slender claws. The two styles and ten stamens are much longer than the petals. The pod is slender and few-seeded at the bottom.

HYDRANGEA.—A shrub with leaves opposite. The tube of the calyx and the ovary are joined. The flowers are small in compound cymes—but some of the outer ones are large and generally neutral. Petals four or five. Stamens eight or ten. The two styles spread and the many-seeded pods open between them.

MOCK-ORANGE.—Also a shrub with opposite leaves. Flowers large and in a sort of panicle. The petals are white and showy. There are twenty or more stamens. Styles three to five united below. The three or five-celled pod contains very many seeds.

SAXIFRAGE.

EARLY SAXIFRAGE.—Many white flowers on a scape from four to nine inches high. Leaves obovate, toothed and all clustered at the root.

SWAMP SAXIFRAGE.—Small, greenish flowers clustered on a clammy scape, one or two feet high. Leaves all at the root, from three to eight inches long, and lance-oblong shape.

HYDRANGEA.

GARDEN HYDRANGEA.—Leaves very smooth, and flowers large and mostly neutral ones, either pink, purple or blue.

WILD HYDRANGEA.—Flowers white, and mostly perfect. The leaves are sometimes heart-shaped. They are thin, and nearly smooth.

MOCK ORANGE, OR SYRINGA.

COMMON SYRINGA.—The flowers are in large panicles, cream-colored and fragrant, with styles separate.



SYRINGA.

SCENTLESS MOCK ORANGE.—The flowers grow only a few on the spreading branchlets. They are pure white, larger, and appear later than the Common Syringa.

ARALIA FAMILY.

SPIKENARD.—A stout, spreading herb. Thick, spicy root. Leaves very large. Leaflets heart-shaped. Umbels. Grows in rich woods.

PRICKLY ARALIA, OR ANGELICA TREE.—A shrub or low tree, with a prickly, stout, simple stem. The leaves are very large, with ovate leaflets. Umbels many, forming a large panicle.

BRISTLY ARALIA.—The stem is about a foot high. It is bristly below and woody at the base. Leaves are twice pinnate. The umbels are few, and form a corymb.

SARSAPARILLA ARALIA.—The root is horizontal, long and slender, and used as a substitute for Sarsaparilla. The long-stalked, compound leaf and the naked flower-stalk bears few umbels that rise separate from the ground.

GINSENG.

TRUE GINSENG.—Root is long and large and warm-aromatic. The leaflets five. It is a low herb with simple stem, which bears at the top a

whorl of leaves and one long-stalked umbel of white flowers. Styles two or three. Berries when ripe are reddish.

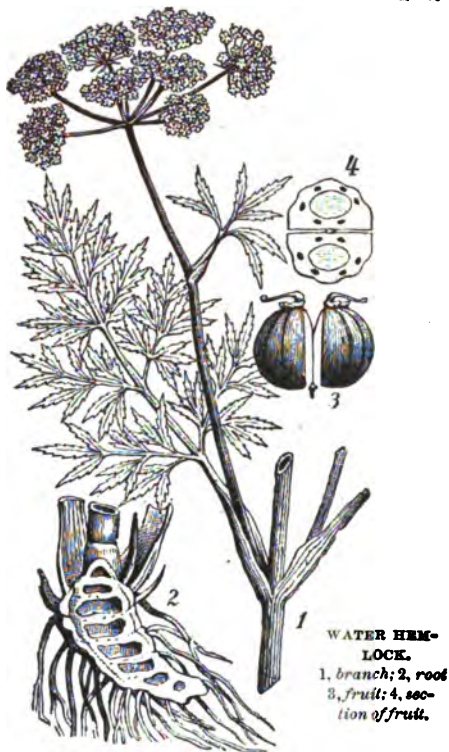
DWARF GINSENG, OR GROUND-NUT.—Root is round, and sharp-tasting. The stem grows from four to nine inches high, and has three or five leaflets.

PARSLEY FAMILY.

These have their flowers in umbels, and are quite interesting to look into; but they are far too hard for little botanists. So you must be content to know that they are the Carrot, Parsnip, Lovage, Celery, Caraway, Water Hemlock, etc.



ANGELICA, OF THE PARSLEY FAMILY.



WATER HEM-
LOCK.

1, branch; 2, root
3, fruit; 4, sec-
tion of fruit.

CORNEL FAMILY.



CORNEL.

DWARF CORNEL.—Called "Bunch-berry." A low herb with four or six leaves near the top. Petals and stamens four. Fruit a berry with a two-seeded stone.



LOVAGE.



CARAWAY.

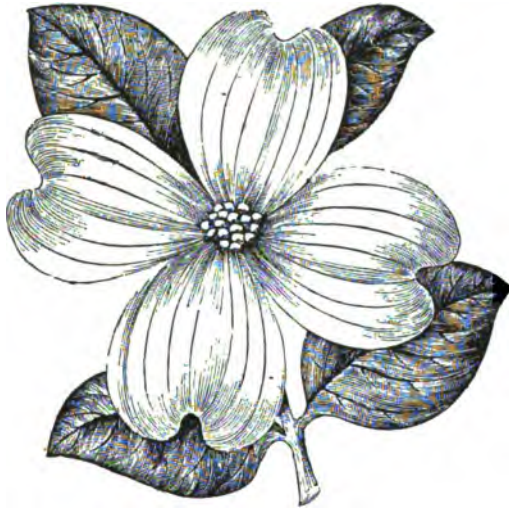
PARSLEY FAMILY.



GROUND NUT.

GINSENG FAMILY.

FLOWERING DOGWOOD.—Shrubs. Large, white, flat flowers.



WHITE FLOWERING DOGWOOD.

FLOWERING CORNEL, OR DOGWOOD.—It is a tree. The leaves of the corolla-like involucre are obcordate.

ROUND-LEAVED CORNEL.—It is a shrub with white flowers in flat and open cymes. The branches are greenish, and dotted with little warts. The leaves are round-oval and woolly beneath. The fruit is pale-blue.

SILKY CORNEL.—The branches are purple. The leaves are ovate or oblong, and their under side and the young stalks are covered with silky wool. The fruit is pale-blue.

RED-OSIER CORNEL.—The branches are red-purple. The leaves are ovate and smooth, but white and roughish beneath. The fruit is white.

PANICLED CORNEL.—Branches gray. The leaves are lance-ovate. The flowers are in a convex cyme. The fruit white.

ALTERNATE-LEAVED CORNEL.—The branches are greenish streaked with white. The leaves are alternate and crowded at the ends of the shoots, and also pointed. The fruit is bright-blue.

MAPLES AND PINES.

How many of you know that there are *seven kinds of Maple Trees*?

Among the Pines there are the SCRUB PINE, the little straggling tree whose leaves, or needles, as you call them, are in twos; the RED PINE, whose needles are also in twos, and whose cones are blunt; the YELLOW PINE with its dainty, slender needles, and the scales of its cones all pointed with prickles that hurt; the PITCH PINE with its dark, stiff needles arranged in threes; the LOBLOLLY PINE, its needles in threes, of very light-green color, growing only in light soil; the LONG-NEEDED PINE, its leaves in threes, long, dark and green, and last of all the WHITE PINE, with its pale-green needles and its long, narrow, hanging cones.

Just so there are *seven kinds of Maple Trees*.

The STRIPED MAPLE has a green bark with dark stripes, and leaves with three short, tapering lobes. Its flowers hang, The MOUNTAIN MAPLE has gray bark, three-parted leaves,

erect flowers. The SYCAMORE—quite rare—has been brought from other countries. It has five-parted leaves and large bunches of hanging flowers. The NORWAY MAPLE is also imported. Its flowers are in corymbs. The wings of the fruit are very large, and its leaves are bright green on both sides, round, and with some pointed teeth. THE SUGAR, OR ROCK MAPLE has leaves with three or five parts, their edges entire except for the waves. Flowers hang on slender, hairy stalks. Fruit has small wings. The WHITE MAPLE, OR SILVER MAPLE has deeply-cut, five-parted leaves, cut and toothed, white underneath. Flowers greenish, short-stalked and without petals. Fruit woolly when young, with large, smooth, spreading wings. The RED MAPLE has leaves whitish on the underside also, with three or five short lobes, toothed. The stalks on which the flowers hang are short, but they lengthen in the fruit season. The wings of the fruit are small and reddish.

GOLDEN ROD AND ASTER.

A FAIRY TALE.



LONG, long while ago there lived upon the top of a great hill a very old woman, bent and crooked and crabbed by the weight of the many years that lay upon her. Up there, one would have thought that she would have kept herself gladsome and happy in spite of the years or the old age creeping on. for the birds were so merry, and the sun shone so brightly and everything rejoiced in the brightness and beauty about them, all except the old woman, who borrowed her looks from nothing there, unless it was the gray sky when the rain fell. Perhaps it was living alone so much that brought it about, for she had only herself to think of, and thinking of one's self will bring neither smiles to the face or gladness to the heart. At any rate, she grew more and more morose each year, and the sky was not blue for her, and the sun shone only to scorch her garden's good, while the birds' merry songs were lost upon her.

The house grew older, like its mistress, as the years went on, and promised to fall down before many more seasons should come and go. But in a certain spot where the moss was green and the shade cool and sweet, a delightful spring burst forth, and went gurgling and dripping and tumbling down the stony side of the hill, until, meeting another farther down, they two made a pretty brook, noisy in its glee, where the birds came to dip, and coo, and comb their feathers. The brook danced far down into the valley, and children played about its brink. But they rarely ventured up the hillside whence it started, for a certain fame of the old woman had gone abroad through the valley.

It was a question whether it was a good thing to grow famous in such a way as this, for the old woman's power, it was said, lay in being able to change beasts into creeping things, and birds into beasts, and children into whatsoever she willed. No wonder, then, that children avoided her and her home, and even the red-cheeked Apples upon her ancient trees.

One day there were seen following the course of the brook, two bright-faced little children, hand in hand, stepping from stone to stone, or stopping gleefully to set their green treasures afloat upon its waters, their tongues joyously busy, or their voices gay with song and laughter. Every now and then they stopped to rest in the shade, and gather a new

store of moss and leaves, and dropping nuts, whose cups made little vessels from which to drink.

How they laughed as a gray squirrel peeped at them from a hole in the hollow trunk of the Oak tree bending above the stream!

Sitting down within the shadow of the hill they rested, and began to eat the cakes the elder set upon her knee. Her golden hair fell soft and thick about her neck, and the sunshine and shadow playing upon it made beautiful shades of shifting color come and go, while her bright little face fairly shone with good humor. Her companion was smaller, with a more delicate outline of feature, and large, soft eyes, that were beautiful in their very depth.

They spread the few bright leaves they had gathered upon the sod, and as the younger, weaving them skillfully into a tiny wreath, crowned the golden head of the elder, their merry laughter awoke the echoes among the hills.

There was a curious haze upon the air, and when the wind stirred the boughs overhead, the acorns dropped about their feet. In the fields beyond, the yellow corn hung where the leaves rustled with every breath, and the crows flew, cawing overhead. Away up above the hill the apples hung, russet and yellow and red, or fell in mellow heaps upon the sod.

"We are almost there," the elder said, hopefully, "only the hill to climb now."

"But are you not afraid?" half doubtfully questioned the younger, fearing that the old woman was hidden some where close at hand, and might pounce upon them at any moment.

"Afraid? oh, no; I will be so glad to ask her how we may do the good we wish, or become a joy to some one or every one. They tell me she is very powerful; and can make people as they wish to be, that is, if it so pleases her."

"But suppose she is cross and old, and, may be, wicked, too, let us go back, Golden Hair; do let us go back."

"Oh, no," again answered the cheery voice of the elder, "not now, when we are so near. See, we have only to climb a little farther."

At this they went on their way singing a song that was of the good they would do if they could. The meaning was so wrought into their singing that a new courage came to them.

Now, the old woman was spinning that afternoon, in front of her door. She wasn't in a very good humor, for her last bit of flax was about all gone, and she did not exactly know where to get any more.

So what does she see but the two children coming up the slope in front of her, hand-in-hand, singing gaily as they came, and only stopping for a moment at the spring to drink, and gather each a russet apple from the heaps upon the ground.

She pounced upon them in a moment; and with the wrinkles gathered in a mass between her eyes, making her look very fierce indeed, and her cap somewhat awry, brought their song suddenly to an end.

"Goodness, gracious me! Whom have we here, drinking at my spring and taking apples that are not their own?"

Golden Hair spoke first.

"Pray, forgive us for the wrong, if we did any; we are looking for the woman upon the hill who can give us what we wish, or change us into what we wish, or change us into what we would like to be."

"Indeed," said the old woman.

"We wish for the good that will make all others happy," said sweet Soft Eyes.

"Indeed," said the old woman again.

"Can you give it us?" from Golden Hair.

"Bless my soul," said the old woman, "but here are two simpletons; to make others happy, indeed; ha! ha!"

"Don't you like to do it yourself, then?" from Soft Eyes. "Oh, Golden Hair, she isn't the one we want, now see?"

"Ah, then you can tell us where she lives, please," from Golden Hair, "and here are the apples, and we are sorry to have vexed you."

"I'll show you, oh, yes; just come in and sit awhile, and you can have the piece of pie that is spoiling upon the shelf."

The children, not liking to disobey her wishes, went, half in fear, within the door and sat down.

That was a long, long time ago, and those who saw the two pretty children go up the hill could not remember to have seen them come down again; but it was remarkable that from that time on there came a new bloom everywhere; tall branches of lovely field flowers that swayed and tossed gaily in the wind or flung out golden glories of color to make every heart glad that saw them.

Some wondered, others admired, and all loved the new comers, and every heart was made happier for their coming. They came in time to be called, by those who loved them, Golden Rod and Aster, and always where one was found the other would surely be close at hand.

Do the little folks who may read this, wonder,

with me, if the two pretty children, Golden Hair and Soft Eyes, were really changed by the old woman's magic wand into the beautiful, laughing Golden Rod and her twin sister, soft-eyed Aster? I, for one, almost believe it.

— HELEN KERN.

GOLDEN ROD.

"How in the world did I happen to bloom
All by myself, alone
By the side of a dusty, country road,
With only a rough old stone

"For company?" And the golden-rod,
As she drooped her yellow head,
Gave a mournful sigh. "Who cares for me,
Or knows I'm alive?" she said.

"A snow-white daisy I'd like to be,
Half hid in the cool, green sod;
Or a pink spirea, or sweet wild rose —
But I'm *only* a golden-rod.

"Nobody knows that I'm here, nor cares
Whether I live or die!
Lovers of beautiful flowers, who wants
Such a common thing as I?"

But all of a sudden she ceased her plaint,
For a child's voice cried in glee,
"Here's a dear little lovely golden-rod!
Did you bloom on purpose for me?"

"Down by the brook the tall spirea
And the purple asters nod;
And beckon to me — but more than all
Do I love *you*, golden-rod!"

She raised the flower to her rosy lips,
And merrily kissed its face,
"Ah! now I see," said the golden-rod!
"How this is the very place

"That was meant for me; and I'm glad I bloomed
Just here by the road alone,
With nobody near for company
But a dear old mossy stone!"

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LITTLE FLOWER FOLKS : OR, STORIES FROM FLOWERLAND.

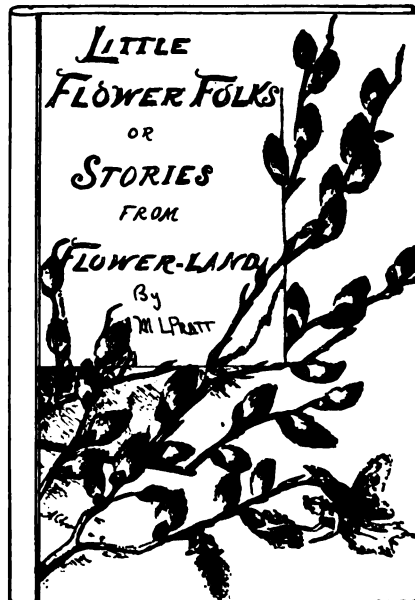
BY MARA L. PRATT.

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There is in children an innate love for flowers. No one so enthusiastically welcomes the spring-time as do the children—no one else has time to welcome it, to no one else is it all so new and beautiful. Then why not nourish and cultivate this taste of the child for the flower world? Is it not as elevating, as worthy, as refining as the taste for dogs and cats, mice and men, to which the ordinary reading book so sedulously caters?

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